Resurrecting the Shop:

Examining the Theory and Practice of Career and Technical Education

A Thesis

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Abstract

This thesis examines the role of career and technical education (CTE) in the PEI Public School System through a critical ethnography. The research methodology involves 3 key components: (1) a critical textual analysis of 27 documents using a 3-point coding process, (open, axial & selective), to identify key themes, (2) a critical textual analysis of the 2013/14 PEI Program of Studies and Handbooks from the 10 English high schools, (3) a reflective auto-ethnography to provide a vantage point for the analysis and to locate myself as the sole investigator. Using this process I clarify where the discourses on public education marginalize CTE and perpetuate the false dichotomy between thinking and doing. Five themes emerge and are elaborated on: (1) the separation of thinking and doing, (2) the image of CTE, (3) the classification of CTE courses, (4) CTE teacher certification and (5) the need for a CTE philosophy for PEI. The research indicates the separation of thinking and doing is prevalent throughout the documents analysed, often resulting in CTE being presented in a deficit light and intended for students systemically identified as general or practical students. The research also reveals an attempt to define CTE as exploratory without further elaborating on the nature of the programs or the impact on student learning. The thesis concludes by recommending the PEI Department of Education, Early Learning and Culture adopt the sixteen strands of CTE (defined by the Association for Career and Technical Education) which would provide a coherent structure to frame CTE programming in the province and to engage CTE teachers in the development of a provincial philosophy for CTE. The University of Prince Edward Island is also encouraged to promote and encourage further research initiatives connected to CTE through the Faculty of Education.

Dedication

This journey has been both rewarding, and a struggle. Throughout the writing of this thesis there were many changes in my life that forced this piece of work to the back burner. Each of these moments – the loss of loved ones, changes in careers, and raising a family – provided time and space for me to reflect on what matters to me in this world. Yet, though it all, my passion and belief in the arguments presented here in this thesis only strengthened. So this thesis is dedicated to all of the loved ones I lost over the past number of years and also the enduring love and respect I have from my beautiful wife Katherine and my incredible kids, Jack and Sophia!

Table of Contents

THESIS/DISSERTATION NON-EXCLUSIVE LICENSE ii
Certification of Thesis Work iii
Abstract iv
Dedication v
Table of Contents vi
List of Tables ix
List of Figures x
Prologue 1
Discovering the Shop 1
Locating the Thesis and Researcher 3
Discovering the Shop Teacher 4
Thesis Statement 8
Overview of the Literature 9
Defining Career and Technical Education 9
Existing Research Trends 11
Summary of Literature 15
Scholarly and Theoretical Literature 15
Thinking versus Doing. 16
Dewey versus Snedden 22
Constructivism. 30
21st Century CTE. 34
Summarizing Dichotomies. 39
Critical Pedagogy 41
Summary of Literature and Theory 48
Methodology 50
Epistemological Assumptions 50
Reflective Auto-ethnography 51
Critical Textual Analysis Part I – Reports and Policy Documents 54
Open Coding Stage. 55
Axial Coding Stage. 55

Selective Coding Stage. 56
Critical Textual Analysis Part II – PEI Senior High School Program of Studies and High School Handbooks 57
Trustworthiness 60
Summary of Methodology, Methods and Analysis 61
Findings and Analysis 63
Anchor Documents 63
Some New Directions Volume I &Volume II. 63
Prince Edward Island Trades Strategy. 64
Summary of Anchor Documents. 69
Themes Emerging from Textual Analysis 70
Theme 1: The Separation of Thinking and Doing. 70
Theme 2: The Image of Career and Technical Education. 78
Theme 3: Classification of Career and Technical Education Courses. 79
PEI Graduation Requirements 81
Course Code Analysis. 83
Course Categories Analysis. 84
Course Analysis by Program. 87
Critical Analysis of Course Coding. 90
Theme 4: Career and Technical Education Teacher Certification. 95
Theme 5: The Need for a Career and Technical Education Philosophy. 99
Summary of Findings 102
Discussion 105
Deepening the Conversation 105
Conclusions and Directions 106
Epilogue 116
Resurrecting the Shop 116
References 117
Appendices 133
Appendix A – Open Coding Stage 133
Open Coding Frame 133

Open Coded Document List 134
Appendix B: Axial Coding Stage 145
Axial Coding Frame 145
Axial Coded Document List 146
Appendix C: Selective Coding Stage 150
Question 5: Selective Coding 150
Question 6: Selective Coding 153
Question 7: Selective Coding 163
Question 8: Selective Coding 173
Question 9: Selective Coding 180
Question 10: Selective Coding 182
Question 11: Selective Coding 188
Question 12: Selective Coding 198
Appendix D: Program of Studies Analysis 199
Course Grade Level 199
Course Code Level 200
Courses Required for Graduation 201
Electives Not Required for Graduation by Course Category 202
Electives Not Required for Graduation by Course Coding 203
CTE Electives Not Required for Graduation 204
List of High School Handbooks 205

List of Tables

Table 1 CTE Career Clusters as Defined by the ACTE 9

Table 2 PEI High School Course Codes 59

Table 3 Ranking of Issues Affecting Recruitment, Training and Retention of Personnel in the Skilled Trades 67

Table 4 Prince Edward Island High School Graduation Requirements 81

Table 5 Description of Open Courses from High School Handbook 86

Table 6 Description Post Secondary Requirements from High School Handbook 87

List of Figures

Figure 1. Dichotomies surrounding career and technical education. 40

Figure 2. Breakdown of PEI Program of Studies by subject heading 58

Figure 3. Illustrates the three key components of the research methodology used to complete this study. 50

Figure 4. Youth in Secondary School Pathway as described in the PEI Trades Strategy (2005) 69

Figure 5. CTE Framework graphic developed to represent the range of CTE courses offered in PEI high schools. 80

Figure 6. Grade Level Breakdown of PEI Program of Studies 84

Figure 7. Course code breakdown of PEI Senior High Program of Studies. 85

Figure 8. Grade level and course comparison. 88

Figure 9. Category and subject comparison. 90

Prologue

Discovering the Shop

I remember the first time I cut a piece of wood on a band saw. I was not much more than 8 years old. My great-grandfather had an old shop on a small piece of land at the head of the bay. From the rickety, old staircase that wound up the side of the building, the view is spectacular. How my great-grandfather managed to get the stationary power tools and lumber into the small upper level of the old shop is still a mystery to me. "The Shop", as it is now known, is a small space with one window on the north end. There is ample head room down the middle of the room but the ceiling slopes away on both sides down to a height of little more than two feet. You are literally standing in an attic. The room is full of tools – a band saw, a radial arm saw, small power tools, a workbench and a number of hand tools. There was a pile of hardwood and softwood lying along one wall, an old hutch on the other, and piles of sawdust. The room smelled of a mixture of fresh cut wood and salty sea breezes (and a hint of smuggled rum). The room was always hot, heated by a homemade wood stove down on the main level. The old band saw was operated by a jury-rigged switch that not only turned the saw on, but also a 60 watt light bulb that hung from a wire above the work table. The saw would shake with a certain excitement when you flipped that switch, as the rest of the lights in "The Shop" dimmed to compensate for the power drain. I do not remember what I cut out that day, but I do remember the feeling the experience gave me, the sense of accomplishment, and the excitement to show and tell my parents all about it.

When my great-grandfather passed, my grandfather took over "The Shop" and it remained the same while under his careful watch. He added some new power tools and

continued to produce some beautiful works of craftsmanship. Throughout high school, I would visit him there. I would help out a bit if I could or just watch him work. I had lost interest in woodworking and was more focused on hockey, friends and which university I was going to attend.

This experience from my youth has proved to be inherently valuable and has encouraged my wonder at the way we approach the use of the hands within our schools. As schools continue to raise academic standards and academic student achievement, we seem to have pushed the more practical and tactile disciplines to the margins of our school system. Is this an intended or unintended consequence? Who wins and who loses as a result?

Locating the Thesis and Researcher

"Unless you are planning on going to trade school, take as many academic classes as possible so you do not close any doors. Go to school, get a degree, get a good job; that way you will not need to work as hard as I did" – sound advice from concerned parents wanting the best for their child. My father left school in Grade 11, enrolled in trade school as an electrician, and then opened a restaurant. My mother finished Grade 12, went to hairdressing school, and then joined her husband in the restaurant business. Both my parents understand the meaning of the word work, and more specifically, hard work.

My mother used to work as a hairdresser at the local seniors' home during the day so she could be home in the evening with my sister and me. To help make ends meet, she often cut people's hair in the evenings. I remember many evenings seeing people sitting on an old kitchen chair by the wood stove getting a haircut or Mom washing people's hair in the kitchen sink. My mother recalls one particular evening when, after she put us to bed, she went to the kitchen and realized the cupboards were empty and pay day was still a few days away. She was not certain what she was going to do to get us through. It was then that a knock came at the door. It was Cecil, looking for a haircut. With the five dollars she earned that evening she was able to get the family through till pay day. When Mom tells this story her eyes are filled with a combination of pride and gratitude and I cannot help but feel the same.

As time went on, the kitchen at home was traded for the kitchen at the restaurant. The family restaurant was an extension of our home despite the three kilometer distance between the two buildings. My parents' place of work was their home, and still is, and they pour endless amounts of their energy into it. The restaurant enabled my parents to

provide for the changing needs of our family. I remember many late nights at the restaurant, taking orders, washing dishes, prepping food or falling asleep on top of the chest freezers to the glow of a 13" black and white TV.

As a result of my family's experience, my parents placed a high value on the importance of education and constantly instilled in me a belief that more education will lead to a better paying job and a better future. The irony is my parent's commitment, dedication, and ability to *work* has had a greater influence on my career choices than my education. Education opened the doors, but it was an understanding of how to *work* that enabled me to pass through them.

A central component of this thesis is an exploration of the importance, and the value, of working with your hands within the context of an emerging discourse on the skills required to be successful in today's job market. I intend to explore and challenge the assumption that an academic curriculum relates to thinking, understood as the proper activity of a knowledge economy, whereas a career and technical education curriculum (CTE) relates to doing, understood as the proper activity of industrial economy. The idea that if you are good with your hands, you must not be good with your head, and vice versa, is a false one. It results in the misleading dichotomy between thinking and doing, between an academic education and CTE. Contrary to this current narrative, in this thesis I argue that thinking without doing is empty and doing without thinking is worthless.

Discovering the Shop Teacher

When I was 17 years old I loved to sail, and sailing became an important part of my life in the years to come. This being so, it was only natural that when the guidance counselor dropped into our classroom during my Grade 12 year with a stack of university

calendars, asking the question, “What do you plan to do with the rest of your life?” that I naturally thought first of sailing. So for me, the question really was, “What career will enable me to sail more?” Since summertime and sailing seemed to fit together nicely, teaching seemed to me to be the most logical choice.

I will never forget the response from the guidance counselor. He laughed and quickly pointed out that my grades (particularly in English) were far too low and that I should not bother applying. He suggested I consider applying to some undergraduate science programs (to which I would likely receive a conditional acceptance) or to a trade school. So I did what any self-respecting 17 year-old boy would do and applied for teachers college.

A month or so later I was heading to the Nova Scotia Teachers College for an entrance interview, which consisted of a standardized test, a written essay, a group interview and a personal interview. At the end of the day, I felt pretty good about my chances. Later that month, I received a thin envelope in the mail. I was not accepted into the program. So I walked back into the guidance office to pick up the undergrad science applications; leaving the trades school applications on the desk.

When students are beginning to decide what they may, or may not, want to do with the rest of their lives, they are often presented with a hierarchical list of careers that places a higher value on some careers than on others. Based on the student’s performance in high school, assumptions are made regarding the student’s ability and suitability for particular fields of study. The high achieving students are expected to focus on more highly valued programs (i.e., academic programs) and will be encouraged to study more rigorous disciples such as medicine, law and engineering. Mid-range

students will be encouraged to enroll in undergraduate programs in liberal arts and sciences. Low achieving students will be encouraged to find a trade. The remainder will enroll in the school of hard knocks. If only it were this simple.

My senior year continued on as senior years do and the letdown of the rejection letter to Nova Scotia Teachers College was quickly replaced with the enthusiasm and excitement of doing everything for the last time at high school – the final hockey game, the final dance, the final trip to the principal's office, the final exam. As my guidance counselor predicted, I received conditional acceptance to two undergraduate science programs, provided I brought my English mark up to 60% or better. However, I was surprised when one afternoon the Nova Scotia Teachers College called the school looking to setup a phone interview. It seems my application to the science program was transferred to the Technology Education Department and they had a few questions for me. I quickly accepted the interview and immediately thought to myself, "What is Technology Education?"

On Prince Edward Island, Technology Education is a moving target. However, there were two key documents published between 1996 and 2001, while I was entering the profession as a technology education teacher, which have begun to clarify its meaning. The first of these was the *Standards for Technological Literacy: Content for the Study of Technology* (International Technology Education Association, 1996). This document was used to help the Atlantic Provinces Education Foundation (2001) provide the basis for a regional definition in the *Technology Education Foundation Document,* in which it states that, "Technology education for Atlantic Canada fosters the development of all learners as technologically literate and capable citizens who can develop,

implement, and communicate practical, innovative, and responsible technological solutions to problems" (p.5).

As educational institutions, governments, and professional associations look to engage students in learning and adapt their systems to prepare students for work in the 21st century, the question for me has evolved from "What is Technology Education," to "What is the role of Technology Education." For instance, Prince Edward Island has implemented new curricula in career and technical education (CTE). These curricula took their cue from a government report entitled, *Prince Edward Island Trades Strategy,* and the aforementioned *Technology Education Foundation Document.* However, there is a gap in current educational research related to the impact, value and best practices in career and technical education in Atlantic Canada. The new curricula do open the conversation; however, they cannot provide the leadership and vision necessary on their own. Educational leaders need to have access to current research, literature, and trends in career and technical education and technology education from local, national and global perspectives in order to help them make good decisions. Without such lenses, it is only natural for people to look to their own experiences and to popular narratives of past educational practices in making their judgements in regards to CTE programs. I believe this is one source of difficulty that education systems begin to have in moving past old beliefs and where the dichotomy between thinking and doing begins to reveal itself.

Thesis Statement

The purpose of this thesis is to explore the relationship between academic education and career and technical education in the public secondary school system of Prince Edward Island, Canada. It is my intention to indicate how and where in the policies, documents, conversations and practice the dichotomy between thinking and doing exists, how it may be helpful but also how it may be harmful to students. My goal is to open a critical dialogue on the role of career and technical education in the public school system, and to make an argument for positioning academic and career and technical education as equally valuable pathways for students. I hope by doing so to overcome the traditional hierarchy in which academic programs rank above career and technical programs. I also want to challenge the assumption that academic programs are more valuable for the 21st century knowledge economy than career and technical programs.

Overview of the Literature

Defining Career and Technical Education

Career and technical education (CTE) is a new term for vocational education, manual arts, industrial arts and other such programs. The Association for Career and Technical Education (ACTE) states that,

> CTE is at the forefront of preparing students to be "college and career-ready." CTE equips students with: core academic skills and the ability to apply those skills to concrete situations in order to function in the workplace and in routine daily activities; employability skills (such as critical thinking and responsibility) that are essential in any career area; job-specific, technical skills related to a specific career pathway. (Association for Career and Technical Education, 2011).

The ACTE lists 16 different career clusters ranging from Agriculture, Food and Natural Resources, to Transportation, Distribution and Logistics. Table 1 contains the full list of 16 career clusters as defined by the ACTE.

Table 1

CTE Career Clusters as Defined by the ACTE

CTE Cluster	Description
Agriculture, Food & Natural Resources	The production, processing, marketing, distribution, financing, and development of agricultural commodities and resources including food, fiber, wood products, natural resources, horticulture and other plant and animal products/resources.
Architecture & Construction	Careers in designing, planning, managing, building and maintaining the built environment.
Arts, A/V Technology & Communications	Designing, producing, exhibiting, performing, writing and publishing multimedia content including visual and performing arts and design, journalism and entertainment services.

Business, Management & Administration	Business, Management and Administration careers encompass planning, organizing, directing and evaluating business functions essential to efficient and productive business operations. Business Management and Administration career opportunities are available in every sector of the economy.
Education & Training	Planning, managing and providing education and training services and related learning support services.
Finance	Planning, services for financial and investment planning, banking, insurance and business financial management.
Government & Public Administration	Executing governmental functions to include Governance, National Security, Foreign Service, Planning, Revenue and Taxation, Regulation, and Management and Administration at the local, state and federal levels.
Health Science	Planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services and biotechnology research and development.
Hospitality & Tourism	Hospitality & Tourism encompasses the management, marketing and operations of restaurants and other foodservices, lodging, attractions, recreation events and travel related services.
Human Services	Preparing individuals for employment in career pathways that relate to families and human needs.
Information Technology	Building Linkages in IT Occupations Framework: For Entry Level, Technical, and Professional Careers Related to the Design, Development, Support and Management of Hardware, Software, Multimedia and Systems Integration Services.
Law, Public Safety & Security	Planning, managing, and providing legal, public safety, protective services and homeland security, including professional and technical support services.

Manufacturing	Planning, managing and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance and manufacturing/process engineering.
Marketing, Sales & Service	Planning, managing and performing marketing activities to reach organizational objectives.
Science, Technology, Engineering & Mathematics	Planning, managing and providing scientific research and professional and technical services (e.g., physical science, social science, engineering) including laboratory and testing services and research and development services.
Transportation, Distribution & Logistics	Planning, management and movement of people, materials, and goods by road, pipeline, air, rail and water and related professional and technical support services such as transportation infrastructure planning and management, logistics services, mobile equipment and facility maintenance.

Existing Research Trends

The literature related to career and technical education reveals a shortage of current academic research in the discipline within and/or related to Atlantic Canada. Much of the writing within the region related to CTE comes from government reports and studies, not peer-reviewed articles or scholarship. Extensive searches of the ERIC database, Google Scholar, and leading academic journals related to the discipline turn up no hits for secondary career and technical education within Atlantic Canada.

By broadening the search to include the rest of Canada, I found a large selection of articles by Alison Taylor, a professor in the Faculty of Educational Policy Studies at the University of Alberta (Taylor, 2005a, 2005b, 2006, 2007, 2008, 2010; Taylor & Watt-Malcolm, 2007, 2010). The primary focus of Taylor's writing in these articles is on the

role of apprenticeship training within the secondary and post-secondary systems and the school-to-work transitions for youth. Taylor begins to open the discussion on how we value career and technical education in Canada. In a review of school-to-work policies in Ontario, she provides a brief overview of educational reforms in Ontario between 1960 and 1995. From this review Taylor identifies three key insights that connect to how we value career and technical education.

> First, concerns about the role of education in developing human capital have been particularly intense during periods of economic instability. Second, streaming has long been a feature of the school system despite periodic concerns about its effects on already disadvantaged students . . . Third, despite ongoing concerns about the preparation of non-college bound students, it appears that little has been done to create programmes that ensure greater opportunities for success for these students. (Taylor, 2005a, p. 327)

Taylor provides evidence of the academic versus career and technical dichotomy by identifying the academic bias that overshadows attempts to develop alternatives to academic programs, such as school-to-work programs, and by extension, career and technical education programs. "If school administration were faced with a choice of scheduling university versus college or workplace courses, they usually privileged university courses" (Taylor, 2005a, p. 334). Taylor provides further evidence of the academic bias behind education policy when she notes the decrease in funding, resources and facilities made available for career and technical education as well as the shortage of qualified technical teachers in the (Ontario) system. In a concluding comment on educational policy and reform, Taylor states that, "Despite the discourse of re-culturing

schools, policy seems intent on re-culturing ‘at-risk’ students by encouraging them to stream themselves more efficiently” (Taylor, 2005a, p. 337).

> [P]rogrammes must challenge instead of promote academic and vocational distinctions—the restructured Ontario curriculum continues to be delivered in streams leading to different hierarchically ordered labour market destinations (cf.Young, 1998). Programmes should involve the integration of academic and practical knowledge, and given the high education aspirations of youth in Canada, secondary vocational pathways that link to post-secondary destinations are critical. (Taylor, 2005a, p. 337)

The American literature on career and technical education I examined focuses on a set of journals identified by the leading professional associations connected to career and technical education. The National Research Centre for Career and Technical Education (NRCCTE), the Association of Career and Technical Education (ACTE) and the International Technology Education and Engineering Association (ITEEA), all represent current professional conversations that are influencing career and technical education. Three key academic journals emerged as the top sources of peer-reviewed articles within the discipline: (1) *The Journal of Technology Education*, (2) C*areer and Technical Education Research* (formerly the *Journal of Vocational Education*) and (3) *Journal of sTEm Teacher Education* (formerly the *Journal of Industrial Teacher Education*). There are a variety of other journals that publish articles related to secondary career and technical education. Virginia Tech has a detailed list of these all these journals on their website and was an excellent source to find key knowledge and research related to career and technical education (Virginia Tech, 2014).

In their review of the research in the field, Johnson and Daugherty (2008) found that, "research in technology education has a long way to go before it can be considered 'gold standard' research" (p. 25). For Johnson and Daugherty, gold standard research refers to the effective use of randomized trials and empirical data to predict results, and is based on the US Department of Education criteria. In the articles reviewed, they found 56% were quantitative studies, 40% relied primarily on a descriptive methodology, 55% used students as the primary data source, 59% of the articles used self-report and/or perceptions as the primary data type and 62% of the articles focused on teaching, learning and curriculum issues.

In a similar review, Rojewski, Asunda, and Kim (2008) focused on trends in career and technical education research and found that 52% of the articles reviewed were of a quantitative nature, 72% relied on a descriptive/correlation methodology, 32% relied on survey instruments as data sources and test/outcome measures, 31% of the articles focused on CTE teacher recruitment and retention and 30% focused on student issues. Rojewski et al. (2008) also ranked the institutions affiliated with articles they reviewed. They used a scoring system for the articles' author(s), pro-rated based on the order the authors' names were listed. Of the 129 articles reviewed, a total of 85 institutions were represented by the authors. Only one Canadian university – University of British Columbia – made the list of the top 21cited institutions with a rank of nineteenth.

This is an indication of a lack of current Canadian and regional research within the discipline of career and technical education; this thesis is an attempt to fill that gap.

Summary of Literature

Career and technical education programs are being developed and implemented within the Prince Edward Island public school system. The challenge presented by that development and implementation is to determine the foundation on which these courses are built, their purpose and who they are designed to serve. As noted above, because research in the area of CTE is lacking, what is relied upon for policy and program changes on Prince Edward Island (PEI) are either studies from international sources or past practice within the jurisdiction.

The next section of this thesis will explore the scholarly and theoretical underpinnings of my study of CTE and establish my location in this field. This will provide a basis upon which to conduct a critical textual analysis of PEI documents and will include a more thorough analysis of the scholarly and theoretical literature which will continually be elaborated upon and explored in the Findings and Analysis section where a critical textual analysis of the main guiding documents impacting CTE on PEI is provided to explicate the theoretical and practical tensions and dichotomies.

Scholarly and Theoretical Literature

To begin to unpack the scholarly and theoretical literature it is important to acknowledge the role of experience within one's education. We all have experiences that have had an impact on our lives. Some of these experiences are life-changing, while others are more subtle. We may not recognize their value at the time.

I remember as a kid spending time with my sister around Dad's old record player. We would sit for hours fingering through the old vinyl records, picking our favourites, sorting and organizing the albums and arguing over who had the better sound, all the

while doing our best to heed the words of caution from the other room, "Don't you scratch those records!"

John Dewey (1938) argues that many experiences we have are educative while some are mis-educative. He also claims that how we internalize those experiences will influence, positively or negatively, how we move into and through future experiences. In *Experience and Education*, Dewey establishes an argument for the merits and value of creating experiences for students. "Every experience is a moving force. Its value can be judged only on the ground of what it moves toward and into" (p. 38). Dewey talks about the importance of providing quality experiences for students yet cautions against providing experiences for the sake of experiences. Dewey goes on to say that no experience lives or dies unto itself, that every current experience is connected to the ones the student has already had, and will impact the experiences the student will have in the future. "Everything depends upon the quality of the experience which is had" (p. 27).

I lost most of the arguments around the record player. Eventually, I spent less and less time there. Music, though I still love to listen to it, has not had a major impact on my life. My sister's story is different. Today she is a jazz musician and music is all through her life story. She won most of the arguments.

Thinking versus Doing. The recent implementation and revision of career and technical education curricula in Prince Edward Island as defined in the 2013-14 Program of Studies (Department of Education and Early Childhood Development, 2013) is re-opening the debate regarding the role of career and technical education in public education more generally. There exists within our education system a polarizing dichotomy between traditional academic education and CTE that has significant practical

consequences. Students are quickly identified as either vocational students or academic students – if you're not good with your head, you must be good with your hands. In *Shop Class as Soulcraft*, Matthew Crawford (2009) explores this dichotomy and discusses the consequences of separating thinking from doing. One of the main objectives of this thesis is to examine where this separation of thinking and doing exists within the Prince Edward Island public school system.

> [The] twentieth century saw concerted efforts to separate thinking from doing. Those efforts achieved a good deal of success in ordering our economic life and it is this success that explains the plausibility the distinction now enjoys. Yet to call this "success" is deeply perverse, for wherever the separation of thinking from doing has been achieved, it has been responsible for the degradation of work. If we can understand the process by which so many jobs get fragmented, we will be better able to recognize those areas of work that have resisted the process, and identify jobs in which the human capacities may be more fully engaged. (Crawford, 2009, p. 37)

Crawford (2009) describes fragmentation as the mechanism responsible for the separation of thinking and doing. He argues that the segregation of blue-collar and white-collar work coupled with the application of scientific management systems – where a complex task is broken down into a number of smaller, simple tasks – exploits the separation of thinking and doing to the detriment of both activities. The finer any given task is fragmented, the less thought and/or skill is required to complete the task. Crawford continues to argue that the separation of thinking and doing is not limited to the blue-collar, manufacturing, industrial type work, but that it also is prevalent in the white-

collar type jobs that are common within the current knowledge economy and supports this argument by referring to the clerk-type jobs and the automation of office work.

In schools this separation of thinking and doing occurs when students are streamed into either vocational or academic tracks. Often this streaming has little to do with the interests or aptitudes of the student. Students are often advised to select certain courses over others due to the demands of post-secondary institutions. Students are told that the key to a good future is a good job, and the key to a good job is a good education. Therefore it is essential that you maintain a steady diet of academic courses to keep your options open in the future. Students who do not identify themselves as academic or who have demonstrated an inability to perform within the academic programs are encouraged to enroll in vocational and career-type courses to help them explore their options. Subscribing to this type of rhetoric creates a structure in which students are falsely led to believe that work of the head and the work of the hands are isolated activities. In his blog post entitled, "Separation of thinking from doing", World Skills Chief Executive for New Zealand, Bruce Howat, says, "For too long we have seen trades and university as opposing competitors. Universities are for thinking and trades are for doing and the two will never meet. We have separated thinking from doing, in our propaganda and rationalisation" (Howet, 2013).

Lahelma (2009) follows this line of thinking when discussing how dichotomies influence the choices of students and their perceptions of these choices. "Western Cultures are loaded with strong dichotomies, including sense and emotions, abstract and concrete, theory and practice, mind and body, brain and hand… Hierarchy is also

involved, as sense, abstract and things theoretical are more highly valued than emotions, concrete and the practical" (p. 497).

Lahelma continues to explore this dichotomy in relation to career and technical education and academic education from the perspective of educational policies. "[T]his dichotomy is built up between theoretical and practical subjects, as well as between general and vocational sectors of post-vocational education and, later on, between academic and manual work" (Lahelma, 2009, p. 497).

Lyons, Randhawa and Paulson (1991) explore the dichotomy between career and technical education and academic education from a Canadian perspective. "Canadians have historically considered vocational education to be preparation for second-class citizenship. Until recently, we did not treat domestic programs for training highly skilled workers as vital to the nation's interest" (p. 137). Lyons et al. claim the major influences on the Canadian education system originated from three educational models of colonial Britain.

> From England came the tradition of preparing sons of gentlemen for university in schools originally called Latin Grammar Schools and later just grammar schools. These emphasized a classical curriculum and gave high priority to sports, all under the Anglican Church's watchful guidance (Mangan, 1981). Scotland, a poorer nation but with a strong commitment to education, had developed a more general curriculum for secondary school students (Hamilton, 1970). Scottish secondary schools accommodated capable students from all social classes, preparing students both for university matriculation and for more practical pursuits … The third model was that of the English dissenting academies, which

> revealed their middle-class roots and aspirations by discarding much of the traditional, classical curriculum and by almost solely offering practical courses. (p. 138)

Following this line of reasoning further, Lyons et al. (1991) claim each of these systems of education have had a lasting impact on our Canadian education systems and how we value vocational education. Having an education was viewed as a way to improve a person's station in life or class. As the middle class continued to grow, and more immigrants moved to Canada during the mid to late nineteenth-century, there were increasing pressures on school systems to provide students with a more academic program.

> When high schools were established, parents often pressured them into providing those academic subjects that would gain university admission for graduates. High schools' boards of trustees frequently acceded to such requests because schools offering academic subjects often received larger government grants. . . . By the turn of the century, therefore, despite differences in name, most Canadian secondary schools offered a rather general but distinctly academic curriculum with only slight attention to practical subjects. (p. 139)

In his study of vocational education in Ontario's secondary school, Smaller (2000) acknowledges that, ". . . vocational education means many different things to different people and organizations" (p.4). For the purposes of his study, Smaller used a definition of vocational education as stated by the Canadian Teachers Federation: "Vocational education will be defined as that which 'specifically directed toward the teaching of skills and knowledge which are useful in occupations for which post-

secondary education is not required and which may help graduating students qualify for entry-level positions in those occupations" (p. 4).

These examples of the value of career and technical education within the public school system raise many questions. What is the purpose of career and technical education programs? Who is best served by career and technical education programs? Who should be encouraged to enrol in career and technical education programs? Taylor (2006) argues that career and technical programs are most often designed for the students who are otherwise deemed incapable of an academic education.

> Vocational education has historically connoted a "teaching-learning process that is less demanding, and intellectually less rigorous, than academic schooling" (Smaller, 2003, p. 97). Other writers have similarly described vocational education as the lowest form of education or training aimed at preparing working-class or "problem groups" of youth for work (Lyons et al., 1991; Raffe, 1994; Benavot, 1983). (Taylor & Watt-Malcom, 2010, p. 13)

The research presented in this section indicates that career and technical education is often marginalized within the school system and considered less worthy of study when compared with a traditional academic education. Factors such as an expanding middle class, changes in economies, and immigration have all contributed to perpetuating the stereotype and creating the existing hierarchy. Part of the task of this thesis is to identify examples within the Prince Edward Island context of where this marginalization occurs within educational curriculum, policy and discussion. However, the debate regarding the role of career and technical education within the public school system is not unique and

has a rich history that involves educational theory, economics and interpretations. The next section will briefly summarize this history.

Dewey versus Snedden. During the late 19th and early 20th centuries the debate over the role and value of vocational education was also underway in the United States. The Industrial Revolution was in full swing and the early part of the twentieth century saw industry demands for a trained labour force grow as did the pressure on the education system. "The 20th century has witnessed considerable debate on whether instrumental skills-based education better prepares students for their occupational life than traditional academic programs" (Hyslop-Margison, 1999, p. 23).

One of the leading educational thinkers during the early part of the 20th century was John Dewey. His views and ideas have had a significant impact on career and technical education and how we have come to value it. John Dewey outlined his beliefs on education in "My Pedagogic Creed" in 1897 and continued to explore these beliefs throughout his practice and writings.

> I believe that we violate the child's nature and render difficult the best ethical results, by introducing the child too abruptly to a number of special studies, of reading, writing, geography, etc., out of relation to this social life.
>
> I believe, therefore, that the true center of correlation of the school subjects is not science, nor literature, nor history, nor geography, but the child's own social activities. . . .
>
> I believe, therefore, in the so-called expressive or constructive activities as the center of correlation.

> I believe that this gives the standard for the place of cooking, sewing, manual training, etc., in the school.
>
> I believe that they are not special studies which are to be introduced over and above a lot of others in the way of relaxation or relief, or as additional accomplishments. I believe rather that they represent, as types, fundamental forms of social activity; and that it is possible and desirable that the child's introduction into the more formal subjects of the curriculum be through the medium of these activities. (Dewey, 1897, p. 78)

Dewey's approach to education is rooted in experience and often described as pragmatic. It can be described as one that is focused on application rather than the abstract and that supports the integration of traditional academics into hands-on applications. Pragmatic education is designed as an integral part of a student's life – not solely as preparation for life.

> I believe that the school is primarily a social institution. Education being a social process, the school is simply that form of community life in which all those agencies are concentrated that will be most effective in bringing the child to share in the inherited resources of the race, and to use his own powers for social ends. I believe that education, therefore, is a process of living and not a preparation for future living. (Dewey, 1897, p. 76)

In his book, *Experience and Education*, Dewey raises a dichotomy, what he refers to as "Either-Ors," in his discussions of traditional and progressive education. Dewey lays the groundwork for a philosophy of education that revolves around experience and

establishes an argument for the merits and value of creating quality learning experiences for students.

> Young people in traditional schools do have experiences; . . . the trouble is not the absence of experiences, but their defective and wrong character — wrong and defective from the standpoint of connection with further experience. . . . It is not enough to insist upon the necessity of experience, nor even of activity in experience. Everything depends upon the quality of the experience which is had. (Dewey, 1938, p. 27)

The modern day proponents of quality experience in career and technical education are found in a number of professional organizations and academic journals: The Association for Career and Technical Education (ACTE); the National Research Center for Career and Technical Education (NRCCTE); the International Technology Education and Engineering Educators Association (ITEEA), represent three such organizations.

The ACTE's publication *Techniques* dedicated their April 2011 edition to revamping CTE's image and identity. The following three selections from that edition best capture the concerns related to the image of career and technical education in contemporary educational policy.

> While the field of CTE is changing, the perception of it has not. The general public, policymakers and media have a misconception about the quality, rigor and relevance of CTE programs today. The negative perception of CTE is not only happening in the United States. ACTE has met with international delegations from several countries, including China, Ukraine, Saudi Arabia and Iceland.

> During each of these international visits, participants discussed how the stigma of CTE (that it is the refuge for the not-so-smart students) affects the number of students entering CTE professions. (Kidwai, 2011, p. 17)

While there is recognition that career and technical education is doing its part by working to update programs, there is a sense that this has not led to a change in how the subject is being presented to students or valued by the education system.

> Even though we (CTE) have made progress in aligning curriculum, meeting standards and providing real-world experiences for students, our image both within the community and publically has not changed. Instead of fighting the negative views of CTE, we have focused our attention on students and adjusting to the new advancements in our career field. (Davis, 2011, p. 10)

At the same time, some within the career and technical education community caution that if we focus on the image of CTE we are potentially missing the opportunity to examine critically our own practices and potentially slow our own progress.

> Although the image of CTE continues to be a source of concern for the field, we caution that focusing too much on image can be a "red herring" — a distraction that sometimes serves to defend practices that really do need to change. . . . We suggest that perspective about CTE changes — when we pursue high-quality research, make purposeful changes in our approaches, and consistently work to bridge the gap between academic and CTE worlds. (Park, Pearson, & Sawyer, 2011, p. 20)

As career and technical education continues to search for its rightful place in the education system, there also exists a significant difference over how best to deliver a

skills-based curriculum to students. The dichotomy that is created within career and technical education is based on two distinct views. On the one hand, there exists an approach based on social economy or social efficiency as defined by David Snedden. On the other hand, there is an approach based on social democracy as defined by John Dewey.

> He [Snedden] argues that "social economy" calls for a system of vocational education that prepares the "rank and file" to become efficient "producers," asserting that this form of schooling needs to be separated from liberal education, which – although its purposes "are as yet shrouded in the clouds of mysticism" – may still be useful for those who are going to be "utilizers." In contrast, Dewey's ideas seem to resonate better with current political, social, and educational thinking. He charges that Snedden's system of "narrow trade training" leads to "social predestination" and argues instead for a broad vision of vocational education that has "as its supreme regard the development of such intelligent initiative, ingenuity and executive capacity as shall make workers, as far as may be, the masters of their own industrial fate." (Labaree, 2010, p. 164)

Throughout the literature on the history of career and technical education and vocational education, numerous articles have appeared that make reference to this all-important debate between John Dewey and David Snedden regarding the purpose and place of vocational education in the public school system: (Braudy, 2004; Doolitte & Camp 1999; Herschbach, 1997; Hyslop-Margison, 1999; Labaree, 2010; Martinez Jr, 2007; Roberts & Ball, 2009; Volk K.S., 2005).

At the centre of the argument between Dewey and Snedden is the purpose of vocational education. Snedden argued that vocational education should be rooted in the needs of industry and the preparation of workers. "Snedden (1915) made clear his orientation in the statement, 'Vocational education is, irreducibly and without unnecessary mystification, education for the pursuit of an occupation' … vocational education must result in 'a greater productive capacity'" (Braudy, 2004, p. 2). Snedden believed that vocational education should be separate from academic education and students should be streamed into the most appropriate track. Dewey argued that the role of vocational education was to provide students with meaningful experiences that will help them grow into active educated members within our democratic society. "Dewey's (1915) response reiterated his position that education's purpose was larger than the 'acquisition of specialized skill in the management of machines' and that this definition of vocationalism was 'at the expense of industrial intelligence based on science and a knowledge of social problems and conditions'" (Braudy, 2004, p. 2). Dewey believed that all students would benefit from vocational education and that it should be integrated into the public school system. "Dewey argued for an integrated approach in which vocational skills and academic content were blended and delivered in a context-rich environment with a purpose of developing transferable life skills" (Roberts & Ball, 2009, p. 81).

In the end it was Snedden's argument that vocational education must reflect social efficiency and be devoted to the development of a skilled workforce that prevailed. This is not so surprising when viewed against the economic trends during the same time period

that saw the adoption of scientific management – Taylorism – and the assembly line in what Crawford (2009) refers to as the degradation of blue-collar work.

> Taylor writes, "The managers assume ...the burden of gathering together all of the traditional knowledge which in the past has been possessed by the workmen and then of classifying, tabulating, and reducing this knowledge to rules, laws, and formulae." Scattered craft knowledge is concentrated in the hands of the employer, then doled out again to workers in the form of minute instructions needed to perform some part of what is now a work process. This process replaces what was previously an integral activity, rooted in craft tradition and experience, animated by the worker's own mental image of, and intention toward, the finished product. Thus, according to Taylor, "All possible brain work should be removed from the shop and centered in the planning or lay-out department." … Once the cognitive aspects of the job are located in a separate management class, or better yet in a process that, once designed, requires no ongoing judgment or deliberation, skilled workers can be replaced with unskilled workers at a lower rate of pay. (Crawford, 2009, p. 39)

However, Labaree (2010) asks, why, if Snedden won the debate and was instrumental in shaping the future direction of vocational education, do we not remember him? Why is it that John Dewey is still heralded as a leader in career and technical education?

> But even if it is understandable that the social-efficiency orientation won out in the struggle to reshape American schools, that still leaves open the question of how someone as narrow, wrong-headed, and strange as David Snedden could

> have been its leader and major spokesman. ... Snedden was the right man in the right place wielding the right idea for his times. (Labaree, 2010, p. 182)

The result of vocational education electing to follow the lead of social efficiency as a philosophical approach for teaching and learning has been the further polarization of career and technical education and academic programs today.

> Snedden's social efficiency argument, in tandem with his drive for vocational streaming in the schools, promoted both gender and class social engineering, with women's education being refocused from industrial to home economics. With the passing of the Smith-Hughes Act of 1917 and its federal aid for vocational education, the split between vocational education and academic education congealed; and the potential class and gender biases solidified. (Braudy, 2004, p. 2)

Crawford points to the Smith-Hughes Act of 1917 as a solidifying agent in the dichotomy between vocational education and academic education. Although this act was an American piece of legislation, the resulting view and image of vocational education had lasting impact that extended beyond the borders of the United States.

> Of the Smith-Hughes Act's two rationales for shop class, vocational and general ed, only the latter emphasized the learning of aesthetic, mathematical, and physical principles through the manipulation of material things. It is not surprising, then, that the act came four years after Henry Ford's innovation of the assembly line. The nascent two-track educational scheme mirrored the assembly line's severing of the cognitive aspects of manual work from its physical execution. Such a partition of thinking from doing has bequeathed us the

> dichotomy of white collar versus blue collar, corresponding to mental versus manual. (Crawford, 2009, p. 31)

It is important to recognize that within this debate there is a very critical blending of two issues that is continuing to hinder career and technical education today. That is the concept of streaming students and the dichotomy that is created between academic education and career and technical education. It seems that, through debate and discussion, the idea of preparation for work (doing) became synonymous with a general stream whereas preparation for further education (thinking) became synonymous with an academic stream.

The following section continues to build the basis for this thesis by exploring the educational theories and underpinning that align to career and technical education.

Constructivism. Doolittle and Camp (1999) claim that as a result of social efficiency, the learning theory underlying curriculum, pedagogy and policy in career and technical education became behaviourism.

> Six fundamental theories formed the basis for social efficiency as Snedden and Prosser applied the doctrine to career and technical education in the early 1900s: Socio-economic stratification; Probable destiny (social classes are inherently stable); Psychometrics; Social control; Pedagogy (organized, rigidly sequenced, hands-on approach to teaching); Behaviorism. (Doolittle & Camp, 1999, p. 2)

Doolittle and Camp (1999) suggest that as we move into the 21st century, the interests of career and technical education may be better served if cognitive constructivism – a learning theory more in line with the vision of John Dewey – was adopted as the underlying learning theory.

> Career and technical education remains, in fact if not expressly, founded on the learning principles of behaviorism. Many scholars and reformers in the profession have advocated changes that implicitly relied on cognitive constructivist principles. Indeed, many of the changes we have seen in recent years implicitly rely on constructivist principles. Nevertheless, scholars in the profession have yet to explicitly address the shift from behaviorism to constructivism. The path of reform the profession has followed over recent years places a strain on the degree to which behaviorist learning theory can adequately describe, explain, and predict the pedagogy needed by career and technical education as we move into the new millennium. (Doolittle & Camp, 1999, p. 7)

Roberts and Ball (2009) pick up on this in their examination of agricultural sciences as a body of content knowledge in contrast to context for learning. They argue that career and technical education, as content, is informed and aligns closely with the tenants of behaviourism in that the desired outcome of the learning is a definite and definable skill. Behaviourism is rooted in realism, has a strong belief in the scientific method, and believes that people can be shaped by environmental circumstances. The idea is straight forward enough: develop proven inputs or stimuli that will elicit the desired and appropriate behavioural response; establish an expectation and a stimulus so that when students enter the CTE facility they put on their safety glasses. The use of drill, practice and conditioning will lead to the automation of the desired behaviour.

> From a theoretical perspective, education with the purpose of acquiring knowledge and skills in preparation for a job aligns with behaviorism, in that learning leads to an observable change in behavior (Schunk, 2000; Skinner, 1953;

> Thorndike, 1932). Although Doolittle and Camp (1999) made an eloquent argument that cognitive constructivism can provide a theoretical framework for CTE, they acknowledged that behaviorism was the dominant learning theory applied in CTE. Further supporting a behavioral framework for content-centered CTE, Doolittle and Camp explained that curricula composed of knowledge and skills derived from industry standards are externally imposed on the learner. (Roberts & Ball, 2009, p. 83)

In contrast, constructivism holds the development of education requires active participation on the part of the learner in the creation of knowledge and also that the learner will construct their understanding from experience and context. Doolittle and Camp (1999) outline four "essential epistemological tenets of constructivism."

> (1) Knowledge is not passively accumulated, but rather, is the result of active cognizing by the individual; (2) Cognition is an adaptive process that functions to make an individual's behavior more viable given a particular environment; (3) Cognition organizes and makes sense of one's experience, and is not a process to render an accurate representation of reality; and (4) Knowing has roots both in biological/neurological construction, and in social, cultural, and language-based interactions. Thus, constructivism acknowledges the learner's active role in the personal creation of knowledge, the importance of experience (both individual and social) in this knowledge creation process, and the realization that the knowledge created will vary in its degree of validity as an accurate representation of reality. These four fundamental tenets provide the foundation for basic

> principles of the teaching, learning, and knowing process as described by constructivism. (Doolittle & Camp, 1999, p. 3)

Roberts and Ball (2009) also explore the idea of CTE as a context for learning. They argue that when viewing CTE as a context for learning it is best informed by and aligned with a constructivist learning theory.

> Agriculture as a context for learning is anchored theoretically in constructivism. Constructivism began not as a learning theory, but rather as a philosophical perspective . . . Constructivist pedagogy then asserts the following (Doolittle & Camp, 1999): learning should occur in authentic settings; learning should incorporate social interactions; content should be relevant to learners; content should be incorporated with the learner's prior knowledge, conceptions, and misconceptions in mind; formative assessments should guide the design of future learning; students should become self-regulated learners in the process; the role of the teacher is that of a facilitator; and teachers should encourage and allow for learners to represent content and learning in a diversity of ways. Although CTE was not theoretically grounded in constructivist theories, it has been noted that scholarship, reform efforts, and policy and structural changes to CTE in recent years have at least indirectly relied on constructivist principles (Doolittle & Camp; Lynch, 2000; Pratzner, 1985). (Roberts & Ball, 2009, p. 85)

The result of this discussion is the creation of a web of theoretical frameworks and underpinnings that have influenced CTE curriculum, pedagogy and policies for the better part of a century. In reviewing this scholarly and theoretical discussion of career and technical education there is evidence of social efficiency, behaviourism, pragmatism,

constructivism, and social democracy. Each of these arguments and positions can be found in claims made by leading institutions in CTE: the Association for Career and Technical Education (ACTE) states that CTE programs are designed to prepare students for both college and careers; the National Research Center for Career and Technical Education (NRCCTE) has a strong focus on curriculum integration and transition programs; the International Technology Education and Engineering Association (ITEEA) curriculum standards strive for technological literacy for all. This leads to the debate and discourses in our present theory and practice of CTE and is further explained below and throughout the thesis.

21st Century CTE. Education systems are currently being challenged better to prepare students for life and work in the 21st Century. A number of organizations and groups have developed a list of 21st Century competencies which all students should have to be successful in the 21st Century. These organizations and groups consist of a range of representatives from government, non-government agencies, and industry and education leaders. "[J]ust as the industrial revolution had profound impacts on American society and education a century ago, today's economic and employment climates will have an impact on society and education" (Roberts & Ball, 2009, p. 82). Some of the competencies identified are critical thinking skills, creativity, problem solving, innovation and digital literacy (Cornelius, 2011; Fidel & Trilling, 2009). As evidenced by the discussions in the literature related to the image of CTE and raising the profile of CTE, there continues to be a struggle around how best to define the role of CTE in public schools in the 21st Century. The ACTE and the Partnership for 21st Century skills recently co-authored a report titled, *Up to the Challenge: The Role of Career and*

Technical Education and 21st Century Skills in College and Career Readiness (Association for Career and Technical Education; National Association of State Directors of Career Technical Education; Consortium and Partnership for 21st Century Skills, 2010). Similarly, the ITEEA recently published *The Connection to the 21st Century Workforce: Technology and Engineering Education* (International Technology Education and Engineering Educators Association, 2011). Both documents serve as invitations into the discussion and debate on how best to position career and technical education with the discourse of 21st Century skills and learning.

Despite growing pressure on CTE to position itself in the context of 21st Century learning, the debate about the role of CTE – preparation for work, preparation for post-secondary, or preparation for life – is still ongoing. The two leading professional organizations, the ITEEA and the ACTE, both have their own perspectives. The ITEEA has originally supported industrial arts programming in secondary schools and has been actively lobbying for a move to technology education (and more recently to engineering education) for all students. The ACTE is rooted in vocational education and lobby for a move to career and technical education that prepares students for both college and a career. "Differing perspectives regarding of the role and purpose of TE (Technology Education) in public education within the United States continue to be widely debated and publicized. Not only has the problem been exacerbated by disagreement and confusion within the TE profession, but also by differing perceptions outside the field" (Wright, Washer, Watkins, & Donald, 2008, p. 79).

> A unified front for the field is currently far from fully developed. The perceptions of technology education vary greatly from state to state, and, in some cases, from

> program to program. These disparities have led to confusion even amongst educators in the field. Technology education is not consistent even in some neighboring communities, creating uncertainty as to the purpose, philosophies, and goals of the field. Similarly, a look at names for the field finds many mutations. In secondary schools today the term "technology education" is often used interchangeably with terms like "industrial technology," "industrial arts," "shop," "engineering and technology studies," and "manual arts." Currently, while 48 states classify their technology education programs under the umbrella term "career and technical education." (Spencer & Rogers, 2006, p. 92)

This is the modern day version of the Snedden/Dewey debate. The ITEEA have focused efforts to separate technology education (formerly industrial arts) from CTE in an attempt to make technology education a core subject in the secondary schools. “During the past two decades, many leaders in the TE profession, particularly those in the ITEA, have made concerted efforts to align the field with the math and science communities, and most recently, with pre-engineering education” (Wright, Washer, Watkins, & Donald, 2008, p. 79).

Sanders (2001) explores this dichotomy in his article on the status of technology education and found close to 60% of programs have shifted from industrial arts to technology education and that only 22% of the instructional practices were considered to be lecture/demonstration as opposed to hands-on activity based.

> There seems to be continued ambivalence regarding the relationship of technology education to vocational and general education. Despite efforts throughout the past century to distance technology education from vocational

> education, there is considerable evidence in this study of the sort of "border crossings" to which Lewis (1996) alluded. Four programs in ten still associate with vocational education, a slightly higher percentage than did so in 1979. This is probably because many technology education programs are currently administered and funded through departments of vocational education. . . . These waters are muddy; the absence of meaningful dialogue within the profession regarding the relationship between technology education and vocational education has led to continuing confusion both within and beyond the field. It is time the profession addressed this issue in an articulate and thoughtful manner. (Sanders, 2001, p. 52)

Write et al. (2008) found in their study on the perceptions of technology education that the majority of respondents to their survey believed technology education to be more closely aligned with career and technical education than with academic programming.

> Historically, in theory and in practice, the survey respondents perceived TE to be a CTE program regardless of their employment position. The respondents selected CTE as the "primary" purpose of TE more than twice as often as they indicated it to having primarily an academic purpose. (Wright, Washer, Watkins, & Donald, 2008, p. 90)

The ACTE continues to promote a line more closely aligned to industry standards and the development of skills while at the same time ensuring students receive the necessary programs to enable them to continue their learning at the college level. This line of thinking is gaining significant attention as evidenced by recent publications: *Pathways to Prosperity: Meeting the Challenge of Preparing Americans for the 21st*

Century, (Harvard Graduate School, 2011)*; Remaking Career and Technical Education for the 21st Century: What is the Role for High School Programs*, Jobs for the Future and The Aspen Institute (Kazis, 2005); *Rigor and Relevance: A New Vision for Career and Technical Education*, American Youth Policy Forum (Brand, 2003).

Calling back into the conversation the dichotomy between career and technical education and academic education and the need for the former to establish an identity for itself, Taylor (2006) suggests the vertical hierarchy that exists between academic and vocational education enables the erosion of vocational education.

> Competition to attract and retain students, in a context where programming continues to reflect an academic/vocational hierarchy, is likely to encourage further erosion of vocational education. Markets and devolution provide incentives for schools to attract high academic students and disincentives for them to offer traditional vocational courses. The market emphasis on being responsive to parents through choice of schools and programmes during high school is therefore important to our analysis of how schools within an education market prepare students for the future. (Taylor, 2006, p. 48)

Taylor goes on to argue that the vertical hierarchy also impacts the nature of school programs available to students. Taylor (2006) uses the metaphor "twinkies" to define low achieving students without clear aspirations and "bright lights" to define high achieving students.

> The process of selection and promotion of students in high schools is less of a problem when the educational provision for all students is equally valuable—that is, when differentiation is horizontal. However, we argue in this section that what

> is being offered to “twinkies” (low achieving students without clear aspirations) is inadequate when compared to what is offered to “bright lights” (high achieving students). This is particularly problematic since performance labels like “bright lights” and “twinkies” tend to act as codes for differences based on social class, race/ethnicity and geography. (p. 48)

Summarizing Dichotomies. Attempting to summarize and simplify the debate and the literature surrounding the role of CTE in public school is complex. Figure 1 below summarizes the range of dichotomies presented in the literature while acknowledging the complexity of each. Each set of arrows symbolize both historic and current debates about the theory and practice of CTE. It is often the tension between the smaller pairs of arrows that limit the potential of career and technical education to position itself as an equal partner in education. This lack of agreement within the career and technical education community in regards to how best proceed is serving only as a means of fragmentation thereby allowing existing hegemonic structures and beliefs to continue and further the marginalization of CTE programs within the school system.

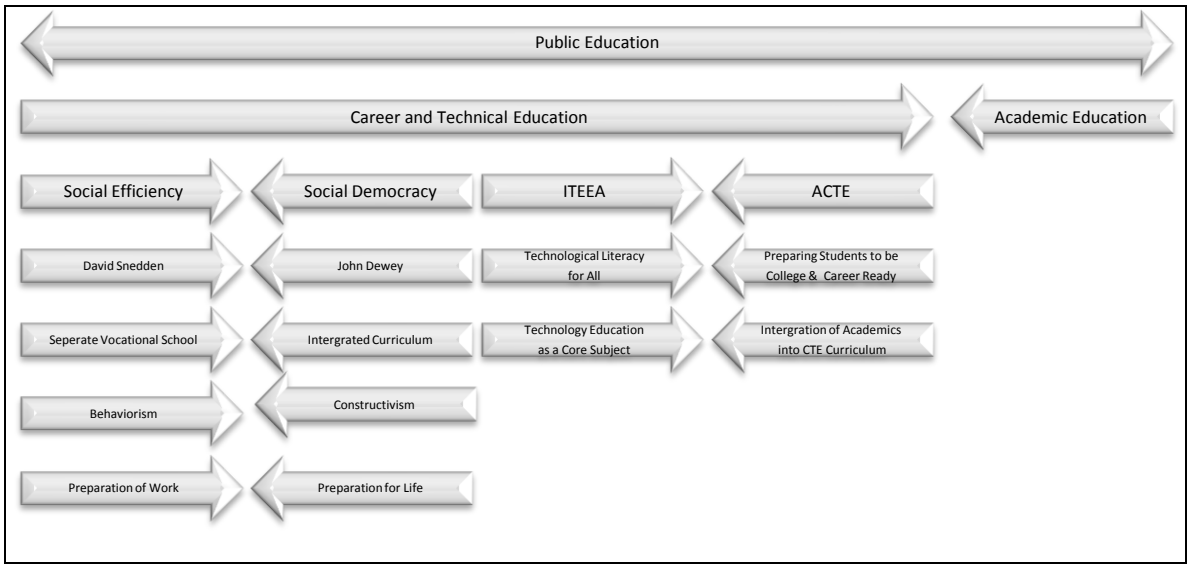

Figure 1. Dichotomies surrounding career and technical education. The arrows indicate the opposite ends of the dichotomies discussed in the literature pertaining to CTE. The arrows are converging rather than expanding signifying that these views are often points of contention and the middle ground is hard to define.

CTE programs are often defined by how they are different from traditional academic programs and not on the merits and strengths they offer to students and the education system. "As a profession, it is time to stop this polarization and begin examining, in a very inclusive and holistic sense, the communicated purpose, intended goals, and actual implementations of agricultural (CTE) education programs and how those align" (Roberts & Ball, 2009, p. 87).

> Clearly, if technology is to have validity as a school subject, its adherents must be able to say what it is uniquely about. . . . If it is the case that these two ways of thinking are each capable of helping students acquire literacy in the subject, then perhaps there is need to view them not dichotomously, but rather symbiotically. (Lewis, 1999, p. 45)

Both of these quotations call for all career and technical educators to become aware of our role and our own contribution to ongoing challenges facing career and

technical education. To accomplish this we must work to become aware our own practices as professionals and ask ourselves critical questions regarding the effectiveness, the unintended consequences, and who is best being served by these practices. The research questions in this thesis focus on the value of CTE within the PEI school system. Critical pedagogy provides a platform for the analysis required to address the research questions explored throughout this thesis.

Critical Pedagogy

To research the value of career and technical education in the Prince Edward Island public school system I have chosen to take a critical pedagogical approach from which to conduct my analysis. This stance creates the space that allows me to look for evidence of where, when, and how the school system acts to marginalize career and technical subjects and students.

Critical pedagogy assumes that knowledge is a social construction based on the agreement and consent between social actors within a system.

> Critical educational theorists view school knowledge as historically and socially rooted and interest bound. Knowledge acquired in school – or anywhere else for that matter – is never neutral or objective but is ordered and structured in particular ways. (McLaren, 2009, p. 63)

For any system to function there must exist a supportive hegemony through which the dominant system controls, negotiates consent, and oppresses marginalized and/or under-privileged members of the society. Dimitriadis & Kamberelis (2006) describe concept of hegemony as defined by Antonio Gramsci; one of the early theorists to write about the concept.

> Gramsci's notion of hegemony relies on particular notions of state and social reproduction. For him, the state does not only rule by force. Although the state does employ coercive means, such as the military and the police, it also rules by consent. And this consent is won on a complex and uneven terrain by invested actors. (Dimitriadis & Kamberelis, 2006, p. 132)

McLaren (2009) further develops this notion of consent. "Hegemony refers to the maintenance of domination not by the sheer exercise of force but primarily through consensual social practices, social forms, and social structures" (p. 67). The idea of consent is very important if one is to take up a critical pedagogical stance. When arguing a position from within a marginalized group it is important to recognize where, and when you are consenting to your own oppression. By identifying the supporting structures that maintain the hegemony, an oppressed group can find a space to engage in dialectical exchange to attempt to alter the hegemony. Some of the structures within a school system which support the hegemony would be: (a) political structures, represented by school governance systems, boards of education, and departments of education; (b) economic structures, represented by school budgets, sources of funding, and access to services; (c) pedagogical structures, represented by curriculum, policy, and faculties of education; and (d) social structures, teachers, students, and parents.

These lists are not intended to be exhaustive; rather, they are presented here as an example of hegemonic structures within the school system which can be used by the dominant group to maintain the established hegemony and negotiate consent.

Structures which support the hegemony are built upon ideas, thoughts, frameworks and understanding of various classes within a society to make sense of the world. Dimitriadis and Kamberelis (2006) cite Stuart Hall (1986) to describe ideology as

> Mental frameworks – the languages, concepts, categories, imagery of thought and systems of representation – which different classes and social groups deploy in order to make sense of, define, figure out and render intelligible the way society works. (Hall, 1986, p. 30)

McLaren (2009) builds his definition of ideology from the work of both Hall and Giroux and refers to ideology as "the production and representation of ideas, values, and beliefs and the manner in which they are expressed and lived out by both individuals and groups" (p. 69).

A hegemonic system, built upon the ideologies, values and beliefs of a society, is the means through which we create and reproduce systems of dominance. In a positive view, should a school system assume the belief that all students are able to achieve their full potential, and the system is designed such that students are free to develop said potential, then the hegemonic system and ideologies are built such that a student may in fact reach their full potential. In a negative view, should the same system begin to pre-determine what is meant by full potential then one can argue that some individuals or groups within the system will be pushed to the margins if they do not fit within the system's definition. The major assumption of a system built in this manner – that all individuals and groups within the system experience the world in a similar manner and shares the same values and beliefs – causes systems to begin to develop conflicting ideologies and systems of domination begin to form. "Domination occurs when relations

of power established at the institutional level are systematically asymmetrical; that is, when they are unequal, therefore privileging some groups over others" (McLaren, 2009, p. 69).

Ideologies therefore can function both positively and negatively within a system depending on whom the ideologies are designed to serve. McLaren (2009) describes how a negative ideology allows the established hegemony to sustain its control of the social construct by means of the theory of domination. McLaren explains that domination through the use of a negative ideology operates through four modes: (a) legitimization – the system of domination is sustained by being represented as legitimate or as eminently just and worthy of respect; (b) dissimulation – relations of dominance are concealed, denied, or obscured in various ways; (c) fragmentation – relations of dominance are sustained by the production of meanings in a way that fragments groups so that they are placed in opposition to each other; and (d) reification – transitory historical states of affairs are presented as permanent, natural, and commonsensical (p.70).

Consider a simplified analogy of a car. The frame and body of the car represent the hegemony, which is the physical system though which we plan to function. The drivetrain, (wheels, axels, drive shaft) and transmission represent the ideologies which will allow the system to operate as intended and also for the system to "shift gears" as necessary to allow the system to continue. The vehicle engine is the source of power, and is symbolic of the values and beliefs of the system. However, at this point our system still cannot operate. It still requires a fuel delivery system, electrical system and heating and cooling system. Furthermore, the vehicle also needs to function within a given set of

environmental conditions. All of these factors can be represented as discourses operating within the hegemony.

Discourses are the rules that govern the operation of the system. It is within these discourses where the system becomes operational and optimized. It is where positions of power are established and terms of consent are negotiated and/or enforced. "Discursive practices, then, refer to the rules by which discourses are formed, rules that govern what can be said and what must remain unsaid, who can speak with authority and who must listen" (McLaren, 2009, p. 72).

Discourses are where our social lines are drawn. They represent how we speak and how we write about our values and beliefs. They are the tools through which the dominant culture is able to maintain the status quo and reproduce the social realty. It is also within these discourses where people can take up a critical discourse to deconstruct and challenge the dominant system – the vehicle's monitoring system. "A critical discourse focuses on the interests and assumptions that inform the generation of knowledge itself" (McLaren, 2009, p. 73).

> We are what we say and do. The way we speak and are spoken to help shape us into the people we become. Through words and other actions, we build ourselves in a world that is building us. That world addresses us to produce the different identities we carry forward in life: men are addressed differently from women, people of color differently than whites, elite students differently than those from working families. Yet, though language is fateful in teaching us what kind of people to become and what kind of society to make, discourse is not destiny. We can redefine ourselves and remake society, if we choose . . . This is where critical

> literacy begins, for questioning power relations, discourses, and identities in a world not yet finished, just, or humane. (Shor, 2009, p. 282)

Critical pedagogy, however, is not simply intended to monitor and tweak the existing system. Recall our earlier assumption that knowledge is a social construction based on the agreement and consent between social actors within a system. Critical pedagogy demands educators to recognize the forms, modes and/or moments of oppression within our system and further to recognize our role within this oppression. The challenge, then, is to decide how to use the tools of the system, to engage a dialectical exchange that allows the system of dominance to become more aware of how, when and why it is oppressing particular components within (or outside) the system. We must then use the tools of the system that support the hegemony and the systems of dominance to engage actively in praxis – described by Freire (1970) as "the action and reflection of men upon their world in order to transform it" – and use the power we have to change, revise or reinvent the hegemony.

In this thesis, I argue that the current school system in Prince Edward Island is designed, and the sources of knowledge are controlled, by an ideology that places more value on academic work than on manual or vocational forms of work. I argue that this ideology trickles down through our policy documents and curricula and serves to oppress or limit the individual choice of students to pursue an area of interest that is not otherwise deemed academic and hence valuable. Furthermore, I propose that an either/or scenario is created whereby an academic education has greater value and considered as a better option for students compared to a career and technical education.

In the article, *A Critical Pedagogy of Vocational Education and Training in Schools and Communities Struggling with Shifts in the Global Economy*, Down (2006) explores how the social hierarchies are perpetuated by the existing conceptions of vocational education based on race, class and gender. Part of that study involved an examination of the policies and practices of the system and questioning who is best served by them.

> How these policies and practices get translated into organizational patterns, routines and habits at the school level raises a number of important questions: How do schools talk about vocational and training? How do they justify streaming practices? What are the assumptions about students, schools and work? What are the effects? Whose interests are served? Who benefits and who loses? (p. 102)

As part of my research, I analysed the Prince Edward Island 2013/14 Senior High Program of Studies (Department of Education and Early Childhood Development, 2013) and examined the availability of courses, the coding system and the discourse around course selection for students.

> School subjects are codified, authoritative systems of cognitive and cultural demands. The nature of these demands weighs more or less heavily or lightly on different families . . . It is through the curriculum that the financial and cultural reserves of educated families are converted into scholastic power – the ability to differentiate one group of children from others on a socially legitimate and authoritative scale of general worth. (Teese, 2000, p. 3)

Furthermore, this thesis shines a light on the hidden curriculum within the education system that perpetuates the academic versus career and technical dichotomy.

McLaren (2009) defines the hidden curriculum as the "unintended outcomes" which are taught in our schools through our practice and the implementation of policy.

> The hidden curriculum deals with the tacit ways in which knowledge and behavior gets constructed, outside the usual course materials and formally scheduled lessons. It is a part of the bureaucratic and managerial "press" of the school – the combined forces by which students are induced to comply with the dominate ideologies and social practices related to authority, behavior, and mortality. (McLaren, 2009, p. 75)

Down (2006) argues that many of the students enrolling in career and technical courses are often from disadvantaged groups and are streamed into programs by the system. This serves as a means of social reproduction and is one way that the hegemonic class structures are maintained. "For increasing numbers of young people in public schools the practice of streaming into vocational education and training programs based on deficit logics serves to perpetuate their relative disadvantage compared to their middle class counterparts" (p. 111).

Recalling the earlier discussion that positioned career and technical education as a marginalized program within school systems and the, "belief that vocational education serves the less able," (Taylor, 2010) establishes a strong purpose for the critical analysis of our policies regarding career and technical education in Prince Edward Island.

Summary of Literature and Theory

The previous chapter provided a broad overview of the some of the challenges and complexities related to career and technical education and its role within the secondary school system. Much of the research presented is based on the experiences in

American school systems. This in indicative of a general lack of scholarship related to career and technical education from the Canadian context and my review of the literature did not turn up any academic research related to the Prince Edward Island experience. The Canadian research that was identified generally presented career and technical education as a deficit program when compared to academic programming. The gap in academic scholarship related to CTE, coupled with the deficit view of CTE are both indications of the need to establish a basis upon which we can explore the role of career and technical education with the PEI public school system and engage in a critical discourse.

The purpose of this thesis is to explore the relationship between academic education and career and technical education in the PEI public secondary school system and to discover how and where, in our policies, documents, conversations and practice, the dichotomy between thinking and doing exists. The next chapter will discuss the methodology used to conduct the analysis of the documents and role and location of myself as the sole researcher within the process.

Methodology

This chapter explains how I approached the research for this thesis. Figure 2 is an illustration that summarizes the research methodology and methods used. This is an appropriate methodology to begin to research career and technical education in Prince Edward Island since the literature review revealed a good deal of theoretical and practical tension and a lack academic scholarship related to career and technical education in both Prince Edward Island and Atlantic Canada. This method provided a structure through which I was able to analyse a wide variety of texts (ranging from 1988 through to the present), and to define a lens through which these documents may be viewed through critical textual analysis and auto-ethnographic methods.

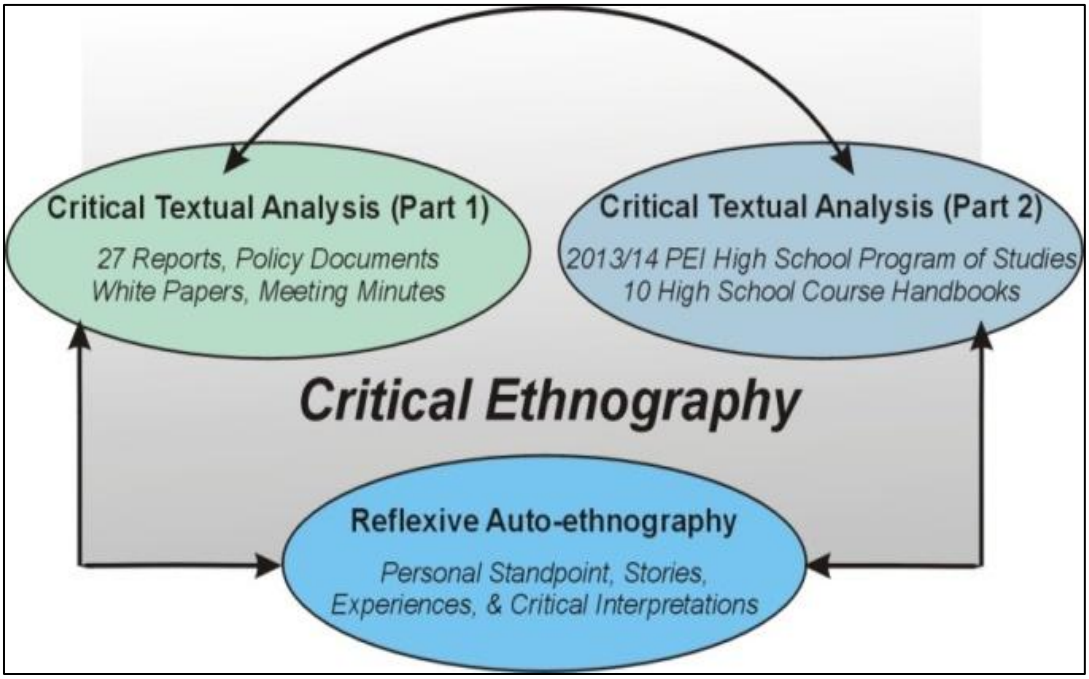

Figure 2. Illustrates the three key components of the research methodology used to complete this study.

Epistemological Assumptions

This research project focuses on the theory, practice and value of career and technical education in public schools. The value our public school system places on

career and technical education has been, and continues to be, a socially created one in which those involved in the discussion (teachers, students, educational leaders, parents, employers) all have a continued influence on how the public school values and shapes career and technical education. If the dichotomous relationship between academic and vocational education exists in PEI public schools, it is because we still construct and perpetuate – through our practices, words, policies, and beliefs – the dichotomy. Drawing on Dewey's (1938) theory of experience, the epistemological assumptions of social constructivism and the lens of critical pedagogy, this thesis aimed to examine examples of the dichotomy between academic and career and technical education. To achieve this goal effectively, the research must be grounded in a social environment that will allow this reality to be observed. I draw on three main research methods to conduct this research: (a) a reflective auto-ethnography, (b) critical textual analysis of reports and policy documents and (c) critical textual analysis of the 2013/14 PEI Senior High School Program of Studies and High School Handbooks.

Reflective Auto-ethnography

Anderson (2006) describes five key features of analytic auto-ethnography: complete member researcher (CMR) status, analytic reflexivity, narrative visibility of the researcher's self, dialogue with informants beyond the self, and commitment to theoretical analysis. I attended to each of these features in the project as follows.

I acted as an opportunistic complete member researcher during this project as my "group membership precedes the decision to conduct research on the group" (Anderson, 2006, p. 379). I have been an active teacher and educational leader for career and technical education in PEI since 2002 and am currently the Career and Technical

Education Curriculum Specialist for the Prince Edward Island Department of Education, Early Learning and Culture. As a result I have written and overseen the implementation of 23 CTE curricula in Prince Edward Island since 2006 and have had the opportunity to visit all senior and junior high schools and their CTE and/or technology education facilities in the province. I have led discussions on topics ranging from facility design, teacher certification, teacher training and curriculum, with teachers, educational leaders and policy makers. It is important that I locate myself within the research and be aware of my position as a career and technical education leader. This position as an insider allows me to directly influence discussions, curricula, and policy connected to CTE at the secondary school level.

Analytic reflexivity is described as "awareness of reciprocal influence between ethnographers and their settings and informants. . . . self-conscious introspection guided by a desire to better understand both self and others through examining one's actions and perceptions in reference to and dialogue with those of others" (Anderson, 2006, p. 382). Throughout the research, I attended to this analytic reflexivity and the narrative visibility through my field notes and journal writings. These notes are represented throughout the research project as personal stories interwoven with professional ideas, insights and growth.

> Autoethnographers should illustrate analytic insights through recounting their own experiences and thoughts as well as those of others. Furthermore, they should openly discuss changes in their beliefs and relationships over the course of fieldwork, thus vividly revealing themselves as people grappling with issues

relevant to membership and participation in fluid rather than static social worlds. (Anderson, 2006, p. 384)

My wife and I move to Prince Edward Island in 2002 for one year while we prepared our portfolios for a return to international teaching. In my experience, there is typically not a big demand for technology education teachers, but when there is a job vacancy, there is usually a shortage of qualified candidates. As it turned out, the week I arrived in Charlottetown I saw a job posting for an Intermediate Industrial Technology teacher and was granted an interview. Though I was not the successful candidate in that competition, the interview did lead to my first teaching assignment on PEI; a small 10% probationary teaching contact – one afternoon a week – teaching industrial arts to a small group of grade 7 and 8 students. Later that fall I attended the annual meeting of the PEI Industrial Technology Teachers Association (PEIITTA) where I met a large number of the technical teachers. The first person I met shook my hand and said, "Welcome to PEI, you'll soon realize that we are so far behind here, we're ahead". This has resonated and stuck with me. Our one year move to PEI has turned into 13 and I have had the professional opportunity to teach in three different schools, serve on the executive of the PEIITTA, and work as a curriculum consultant for CTE. The opportunity for professional growth I have experienced as a technical educator in PEI has been tremendous, yet the notion that, "...we are so far behind, we're ahead", has continued to trouble me.

While engaged in the qualitative critical textual analysis it was important, as the researcher, to declare my position within the project. Wesley (2009) describes the researchers' standpoint in qualitative research as ". . . unavoidable elements of

interpretive inquiry, rather than pollutants" (p.4). Petrina (1998) supports this position by recognizing that the content and discourse analysis does not allow for objectivity on the part of the researcher, "while content and critical discourse analysis configured the analysis . . . they did not provide some foolproof progression from problem to data with the researcher distanced in some remote objectivity" (p. 32).

This research was conducted from my current position as the Career and Technical Education Curriculum Specialist for the PEI Department of Education, Early Learning and Culture. As such, I have a vested interest in the future of career and technical education and technology education programs in the province. I am proud of the contribution of career and technical education to the public school system and am hopeful to see growth in career and technical education programs. Through the use of personal narrative, I weave my personal position into the research but maintain a commitment to theoretical analysis by referring back to the literature on the value of career and technical education and drawing parallels to Crawford (2009) and Dewey (1938) as themes and concepts begin to emerge.

Critical Textual Analysis Part I – Reports and Policy Documents

To begin the textual analysis, I gathered and analysed policy documents from Prince Edward Island that provide insight into policies, position and actions of the PEI public school system. These documents ranged from official government reports to memos and reactions from special interest groups and past PEI school units and/or boards. As these documents were gathered, I created a personal archive collection to store and file these documents. The documents were collected in a variety of ways; some were downloaded from government websites or retrieved from government and UPEI

archives. Others were received from third parties who were aware of my personal and professional research interest.

These documents were analysed using a qualitative critical textual analysis and a three point coding process based on the, "widely accepted three-stage process of 'open,' 'axial' and 'selective' coding" (Wesley, 2009, p. 15). The data sources were open coded (see Appendix A) to identify a list of questions related to career and technical education. Based on the results of the open coding stage, the 27 documents listed in Appendix B were then axial coded based on the questions identified during the open coding phase by labeling, coding and recording passages of the text that correspond to the identified questions in a spreadsheet format.

Open Coding Stage. For the open coding stage of this research, I identified a list of 104 documents (see Appendix A) that related to the theory and practices of career and technical education at the secondary school level. These documents were then coded using the open coding frame found in Appendix A. From this open coding stage a list of questions and subsequent coding frame for the axial stage was developed.

Axial Coding Stage. The original list of 104 documents was reduced to 27 documents for this stage of the research. Only documents identified from the open coding stage that spoke directly about Prince Edward Island and career and technical education were selected (see Appendix B). The data was recorded and tracked in a spreadsheet enabling me to cross-reference the documents and search for common themes and trends.

Selective Coding Stage. The selective coding stage (see Appendix C) involved collating all of the coded data from the 27 texts as a new data set and confirming the identified evidence from the original sample was being properly represented.

Using this method, I was able to analyze all of the documents identified within the data set, and conduct a critical textual analysis based on the emerging themes and evidence from the data. Petrina (1998) describes a critical textual analysis as:

> [M]eans of dealing with latent issues of text quality, such as ideology and symbolic meaning. Discourse refers to recurrent statements, themes and wording across texts, which represent orientations to the world. . . . It is a method that assists the researcher in linking text to structural formations and relations of power. . . . Critical discourse analysis is a means of tying texts together and of demonstrating the political and powerful nature of seemingly mundane statements and symbols. (Petrina, 1998, p. 30)

Five key themes emerged from the documents after the axial coding stage: (1) the separation of thinking and doing, (2) the image of career and technical education, (3) the classification of career and technical education courses, (4) career and technical education teacher certification and (5) the need for a career and technical education philosophy for Prince Edward Island.

It is important to note that these themes were present in all three of the date ranges (pre-2003, 2004-2006, post-2007) used to sort the data during the open coding stage of the analysis. This is of particular interest because it demonstrates a consistent lack of progress over time.

Critical Textual Analysis Part II – PEI Senior High School Program of Studies and High School Handbooks

The second phase of the textual analysis was an analysis of the 2013/2014 PEI Provincial Program of Studies (see Appendix D) and the High School Handbook for each of the ten English Language high schools in PEI: Bluefield Senior High School, Colonel Gray High School, Charlottetown Rural High School, Kensington Intermediate/Senior High School, Kinkora Regional High School, Montague Regional High School, Morell Regional High School, Souris Regional High School, Three Oaks Senior High School and Westisle Composite High School.

For the purpose this research I analysed the provincially authorized courses listed in the 2013/14 Senior High Program of Studies (Department of Education and Early Childhood Development, 2013) which was the current program of studies at the time the research was conducted.

Based on my analysis, Figure 3 illustrates a breakdown of all the course offerings found in the 2013/14 Senior High Program of Studies (Department of Education and Early Childhood Development, 2013) by subject area, grade level and category. The Program of Studies defines 13 subject areas. For the purposes of this study, I combined the French Language course offerings under the English subject heading and the French Social Studies course offerings under the Social Studies heading. There were no other French courses listed in the document.

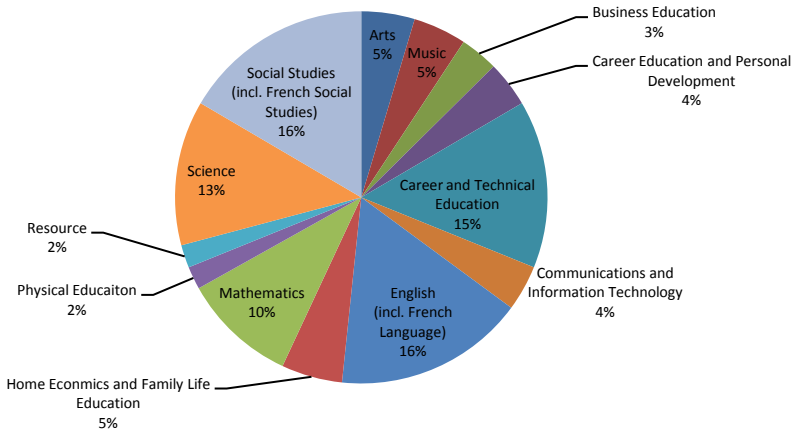

Figure 3. Breakdown of PEI Program of Studies by subject heading

This preliminary analysis shows that English (including French Language) and social studies (including French language) make up the majority of courses listed, at 16% percent each. This is followed by career and technical education at 15%, science at 13% and math at 10%. This will be further analyzed and interpreted in the Findings and Analysis, and Discussion sections.

Courses in the PEI Program of Studies are coded using a seven character coding system as described in Table 2. Every high school develops a course handbook for their school that is distributed to students; each has a version/variation of Table 2.

Table 2

PEI High School Course Codes

Course Name (3 characters)	Grade Level (1 character)	Category (1 character)	Credit (1 character)	Program Code (1 character)
A three letter abbreviation of the course (i.e. AUT, ENG, MAT, SCI)	4 = Grade 10 5 = Grade 11 6 = Grade 12 7 = Grade 10 or 11 8 = Grade 11 or 12 9 = Grade 10 or 11 or 12	0 = Open 1 = Enriched or Advanced 2 = Academic 3 = General 5 = Practical 6 = Modified Program	1 = 1 credit 2 = 2 credits 3 = 3 credits 4 = 4 credits 5 = 1/2 credit	A-E = English Credit F-Q = French Credit S = AP Courses T = External Credential

In my analysis of the PEI Program of Studies for 2013-2014 (Department of Education and Early Childhood Development, 2013), I focused on the two most relevant sections of this coding system where a value judgment may occur, the grade level and the category. Given that only two courses of the 151 listed more than one credit, the credit portion of the code was deemed to not be relevant. Furthermore, students who are in an Advanced Placement, International Baccalaureate (IB), or French Immersion will have other factors that will limit their selections in their timetables, but these factors have not been considered as part of this research.

The High School Handbooks were analysed with respect to graduation requirements as defined by the Ministers Directive 11-02 (Department of Education and Early Childhood Development, 2011), the academic, open and general coding system, and the language used to communicate this information to students. These documents are critical for the textual analysis as these are the documents used by students to help them make their choices regarding which courses to select throughout their high school career.

Trustworthiness

To address rigor within this research I, attended to the criteria of trustworthiness as defined by Bryman, Teevan and Bell (2009): credibility; transferability; dependability and confirmability. To address the possibility that the data collected is credible, I declared my standpoint and insider status to be an important part of the research and stated that I am not a neutral or invisible observer. I described and recorded my position within the reflective auto-ethnography. As the Career and Technical Education Curriculum Specialist for the PEI Department of Education, Early Learning and Culture from 2006-2012, and from 2014-present I have had numerous opportunities to engage in wide ranging discussions with CTE teachers, administrators, senior officials at school boards and departments across Canada. I currently hold membership in both the ACTE and the ITEEA and closely follow the research and work coming out of the NRCCTE. As such I have approached this research as an insider who is committed to the promotion and future growth of career and technical education in PEI. This form of reflectivity was tracked and recorded in the form of a field journal that logs my personal thoughts and development throughout the coding process. These notes informed my personal narrative that is woven throughout the thesis. "Reflexivity refers to assessment of the influence of the investigator's own background, perceptions, and interests on the qualitative process (Ruby 1980). It includes the effect of the researcher's personal history on quantitative research" (Krefting, 1991, p. 218).

The dependability of this research is also affected by my personal location as the sole research and coder of the documents within the critical textual analysis. To support the dependability of the research process, I maintained a close audit trail of the process and

made visible the analysis. I have documented this process (see Appendices A, B, C & D). I have also established a personal archive to store and maintain the documents which were analysed for this project, and have made digital copies of all spreadsheets and coding frames that were used during the analysis which are also stored in the personal archive. The resulting analyses, and subsequent conclusions, are confirmed by attending to the literature and analysis and interpretation based on ideas presented by Crawford (2009) and Dewey (1938).

The findings of this study are not directly transferable to other jurisdictions or social environments. I am therefore cautious not to generalize or attempt to make broad statements based upon my exploratory textual analysis.

However, to support the confimability of this research, clear notes on methodology and method were kept and coding frames established and documented (see Appendix A, B, C & D) so that others may have some ground from which to attempt to replicate a similar study in their own social setting. Furthermore, to improve the confirmability of this research, it would have been advisable to use multiple coders for the data set. This would allow for any discrepancy or disagreement in the codes to be discussed and consensus reached prior to the data being analysed. While not possible here, my thesis committee did act as an ongoing sounding board in guiding the textual analysis and to assure some veracity in the process of extraction of themes.

Summary of Methodology, Methods and Analysis

In summary, this thesis was conducted using a three part critical ethnography. This included a critical textual analysis of a selection of documents about career and technical education in PEI, a critical textual analysis of the 2013-14 PEI Program of

Studies (Department of Education and Early Childhood Development, 2013) and a reflective ethnography to provide a means of location, interpretation and perspective for my role as the sole researcher.

In the next section, the results and interpretations are presented by summarizing two anchor documents that emerged from the research, *Some New Directions Volume I and Volume II* (1988) and the *PEI Trades Strategy* (2005), and by providing specific examples from the critical textual analyses within the five broad themes which emerged from the research: (1) the separation of thinking and doing, (2) the image of career and technical education, (3) the classification of career and technical education courses, (4) career and technical education teacher certification and (5) the need for a career and technical education philosophy for Prince Edward Island. The final chapter then provides further interpretation and analysis of these findings in relation to how this study was similar and/or different from what others have found in the current scholarship surrounding CTE and the overall meaning and direction suggested by this study.

Findings and Analysis

Anchor Documents

The following two sections will elaborate on two documents that emerged as anchor documents and served as a catalyst for policy and/or curriculum changes, *Some New Directions Volume I and Volume II* (Glendenning & Hall, 1988), and the *PEI Trades Strategy* (Trades Strategy Committee, 2005). Details of each of these documents are key to the textual analysis and resulting themes that emerged.

***Some New Directions Volume I &Volume II*.** The most significant and comprehensive document on Vocational Education in PEI is without doubt *Some New Directions Volume I and Volume II*, commonly referred to as the Glendenning/Hall Report. This report was developed in response to an identified need to examine the vocational high school programming. The report was published in two volumes. The first was a comprehensive review of the history of vocational education in PEI, which looked at the technological, environmental, demographic and economic issues connected to vocational education, examined the need for vocational education both in PEI and elsewhere, and finally resulted in questionnaires, surveys and comments from students, educators and employers. Volume II provided a set of 32 recommendations for the Department of Education, 16 of which were focused at the high school level. These recommendations were focused on the following areas: philosophy, planning, program, management, facilities, funding and staffing. Most of the policy documents pertaining to vocational education since 1988 have made reference to, or directly cite, the Glendenning/Hall report.

***Prince Edward Island Trades Strategy*.** The second, more recent anchor document, (still 10 years old, however), that has had a direct impact on career and technical programming at the secondary level, is the *PEI Trades Strategy* (2005) that was submitted to the Canada/Prince Edward Island Labour Market Development Agreement (LMDA). The document was written by a Trades Strategy Committee which was struck in 2003 under LMDA.

The purpose of the *Trades Strategy* was to "Identify the issues facing the trades in Prince Edward Island and to develop a comprehensive framework to respond to the labour market challenges facing the province in the next 10 years" (Trades Strategy Committee, 2005, p. 1). The report begins with a review of existing trades training models within PEI, across Canada and internationally. It then proceeds to identify issues facing the trades in PEI and make recommendations for future development and growth. The document is broken down into the following sections: Section A: Introduction, Section B: A Review of Existing Trades Training Models, Section C: Issues Impacting on Training and Labour, Section D: Issues Outside the Influence of the Trades Strategy Steering Committee, Section E: New Trades Training Framework for Prince Edward Island, Section F: Future Directions and Section G: Recommendations. Below I will review the sections that directly impacted the secondary school system. It was the information and recommendations in these sections that led to the renewal of the provincial CTE curricula and to capital investments into secondary school CTE facilities from 2006 to the present.

Sections B and E of the PEI Trades Strategy contain the most significant reference to secondary schools; however, it is interesting to note that, even though the

Department of Education was represented on the Trades Strategy Committee, I was unable to find any formal record of consultation with high school career and technical education teachers until April of 2005, despite the fact that as early as November 2004 the committee identified the need to consult with high school teachers as stated in the committee minutes. The following excerpts from public domain minutes of meetings are from Appendix A of the published PEI Trades Strategy (Trades Strategy Committee, 2005).

> Barbara asked when the interim report would be tabled and expressed concern over the fact that little contact has been made with the secondary school system. Jenna noted that a meeting was held over the summer and it was agreed that the Department of Education would provide the working group with a contact for each of the high schools. (p. 31 Appendix A.3)

The minutes go on to express concerns related to trades programs at the high school and makes note of the lack of clarity about what is being taught, where it is taught and why it should or should not be taught.

> There is some concern about the current lack of seamlessness between the high schools and Holland College. Barbara noted there is concern over what is happening in the high schools and that no study/reports have been done recently. The Dept. of Education feels there is a real need to look at what is happening at the high school level. (p. 31 Appendix A.3)

An action item was agreed upon at this meeting to convene a working group with participants from the high school level.

> It was agreed that a working group would be formed with participants from the high school level to determine what information we require from the high schools. Craig and Barbara will work with Jenna to determine a Terms of Reference for this working group. (p. 32 Appendix A.3)

The importance of collaborating with the high schools was mentioned again at the next meeting of the Trades Steering Committee, though is difficult to tell whether this was for feedback on the Trades Strategy or simply regarding communication protocols.

> The importance of collaboration with the K-12 system was noted. Barb explained that any new model will have to be presented to the Department before being presented at the school level. (p. 35 Appendix A.3)

I was unable to find any further reference to the working group that was recommended at the November 2004 meeting and there was no further mention of collaboration with the secondary schools on the work of the Trades Strategy Committee until April 2005. One month prior to the report being published,

> [Department of Education representatives] presented information on the proposed training model for the secondary school system. [They] thanked the committee for all the work put into the trades initiative and allowing the secondary system to partner with Holland College and industry. (p. 47 Appendix A.3)

Section C of the Trades Strategy is focused on identifying issues that impact training and labour. This section relied on three primary sources to identify a set of issues that impact the skilled trades in PEI: The Human Resources Study on the Construction Industry on Prince Edward Island (Atlantic Home Building and Renovation Sector Council, 2004), The Atlantic Construction Symposium (Atlantic Home Building

Symposium, 2003) and Accessing and Completing Apprenticeship Training in Canada: Perceptions and Barriers (Canadian Apprenticeship Fourm, 2004).

Section C provides an overview of each report and then compares the results of the all three to develop a list of issues related to the skilled trades in PEI. The committee also conducted four surveys to support the work of this section. It is important to note that none of the surveys were targeted toward secondary career and technical education teachers and/or students. Each committee member was asked to rank and score the identified issues based on their level of importance. Table 3 displays the results.

Table 3

Ranking of Issues Affecting Recruitment, Training and Retention of Personnel in the Skilled Trades

Issue	Score	Excerpt from PEI Trades Strategy (2005)
Legislation and Regulation	26	Low incentive to acquire personal qualification (p.10)
Economic	23	The underground economy is problematic (p.11)
Perceptions	21	Trades education is not highly valued (p.12)
Training	16	All training should be coordinated (p.12)
Career Pathways	15	Existing training paths are not integrated (p.13)
Essential Skills	3	Opportunities are needed for essential skill upgrading (p.14)
Capacity of Industry	3	Availability of paid employment (p.14)
Funding	0	Maintaining and replacing capital equipment (p.15)
Training Entrance Conditions	0	The academic transition between institutions can be difficult (p.15)
Capacity of Training Institutions	0	Availability of training may be inconvenient for students. (p.16)

NB. Each of the excerpts in the third column is directly quoted from the PEI Trades Strategy (Trades Strategy Committee, 2005). The page number is indicated in parentheses.

It is important to recognize that the issues identified in Section C were used to develop the recommendations of the subsequent sections. Three of the ten issues identified in Section C were deemed to fall outside the mandate of the Trades Strategy Committee and were elaborated on in Section D. It is worth noting that the top two identified issues – Legislation and Regulation, and Economic – were two of these three, Funding (which had a score of 0) being the last.

Section E is where the Trades Strategy presents the revised Trades Training Framework for PEI. This framework is built on four principles: (1) the framework shall be responsive and flexible, (2) the framework shall be inclusive, (3) the framework shall recognize and value human capital and (4) the framework shall optimize the use of existing resources.

The section goes on to elaborate the roles of the partners identified within the training structure. For the secondary school system, this role was identified as one of exploration and transition programming that reduces the emphasis on job-specific skills and focuses more on broad skills within a cluster of occupations, (i.e., motive power or metal trades), and further development of the youth apprenticeship program. A pathway was developed for youth in secondary school that begins with "An Introductory Industrial Technology course … for the express purpose of career exploration" (Trades Strategy Committee, 2005, p. 21 Section E) for Grade 10 students. The second stage is for students in Grade 11 or 12 and provides them with "more in-depth career exploration and skills development in an industry sector or trade family" (Trades Strategy Committee, 2005, p. 22 Section E). The final stage is intended to include personal challenges or projects

supported with core experience. Figure 4 illustrates the intended pathway for secondary students as described by the *PEI Trades Strategy* (2005, p. 22).

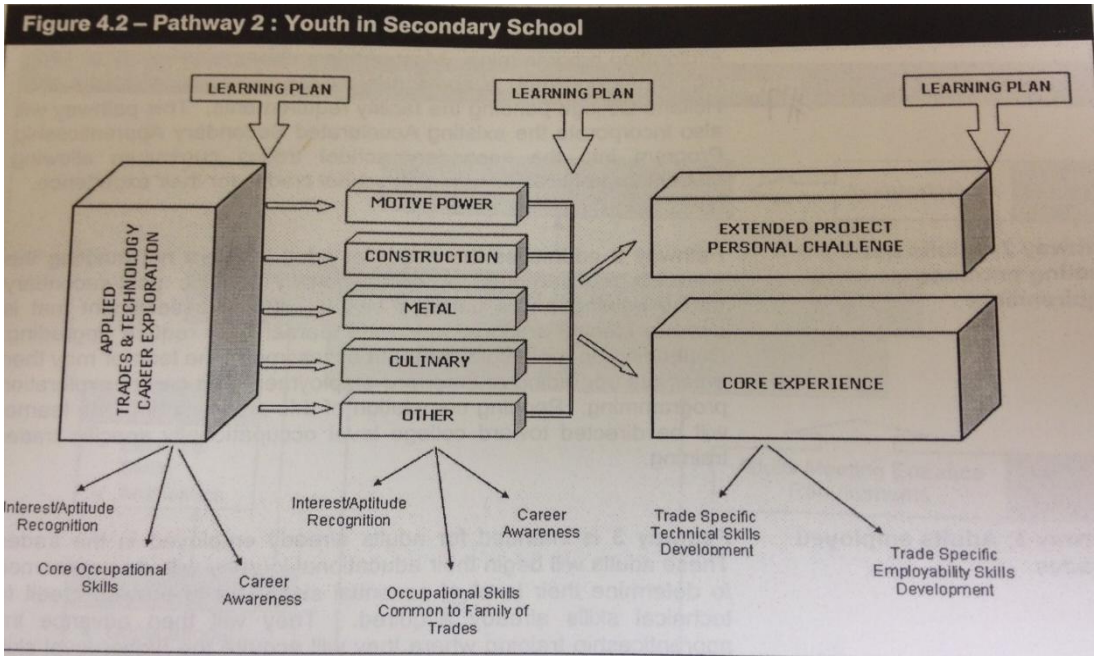

Figure 4. Youth in Secondary School Pathway as it appears in the *PEI Trades Strategy* (2005, p. 22)

Summary of Anchor Documents. The *PEI Trades Strategy* (2005) and *Some New Directions Volume I and Volume II* (1988) are two of the most influential and comprehensive documents that both support and address the need and purpose of career and technical education at the secondary level in PEI. Both documents had the goal of examining the technical training programs in PEI and providing recommendations to government and learning institutions. *Some New Directions Volume I and Volume II* (1988) has been either referenced or directly cited in a number of documents analysed for this research, including the *PEI Trades Strategy* (2005). The *PEI Trades Strategy* was a catalyst document whose recommendations were endorsed by the report *Excellence in*

Education: A Challenge for Prince Edward Island: "it is therefore recommended that the provincial government commit to implementing the new Trades Strategy" (Kurial, 2005, p. 38). This led to the development and implementation of 23 new career and technical education curricula and significant investments into the CTE facilities in all PEI high schools from 2006 till the present.

Themes Emerging from Textual Analysis

As mentioned in the Methodology chapter, the original sample of 104 documents was reduced to 27 documents following the open coding stage of the analysis. The following sections are dedicated to describing the themes that emerged upon completion of both phases of the critical textual analysis:(1) the separation of thinking and doing; (2) the image of career and technical education; (3) the classification of career and technical education courses; (4) career and technical education teacher certification, and (5) the need for a career and technical education philosophy for Prince Edward Island.

Theme 1: The Separation of Thinking and Doing. While there is recognition in most of the documents of a role for career and technical education in the public school system, this role is often identified as a *lesser alternative* to an academic route. "It is therefore recommended that the general stream of courses in senior high be refined and upgraded, especially in math and numeracy, in order to better prepare students for college, the trades, and the workforce" (Kurial, 2005, p. 38)

Care is taken in the documents not to isolate career and technical education programs as non-academic, but they lack a clear definition of what is expected of these programs, often seeking further research or encouraging broad-based exportation of a subject/topic.

> Secondary education is intended to serve the needs of all school age youth. In addition to being useful in its own right, it should also prepare people for the next level of education or to enter wage-earning employment. The latter receives scant, but deserves more, attention in most schools. (Glendenning & Hall, 1988, p. 4)

There is extensive reference in the documents researched to career and technical education programs as "hands on learning" that is related to employment and careers as well as technical post-secondary training. However, there are also calls for career and technical education to "expand" focus to include more academic skills. These statements emphasize a distinction that needs to be brought to light – just because a person is working with his/her hands does not therefore imply he/she is not using his/her head.

> The focus of vocational education skills training on the psychomotor activities associated with the jobs of the industrial revolution is no longer appropriate. There is a need to expand the vocational curriculum with emphasis on the cognitive and affective aspects of jobs. (Senior High Review Committee, 1994, p. 46)

This is where the separation of thinking and doing and the marginalization of career and technical education begins. The comment above is asking for an expansion in cognitive (head) work at the expense of the psychomotor (hands), thereby assuming the work of the hands is in some way separable from that of the head. The same document continues to marginalize the role of career and technical programming by linking it to the concept of streaming.

> Clearly, a majority are concerned about the purpose of the present general stream and would like to see it become more meaningful rather than a "watered-down" version of the academic stream. One suggestion, with growing support throughout other provinces in Canada, is the redesigning of the general stream into a technical stream where some measure of preparation for the work place or post-secondary training are provided. (Senior High Review Committee, 1994, p. 35)

Once again, the major assumption being made here is that preparation for work (doing) is somehow separate from, or does not require further post-secondary study (thinking). In a survey from the same report, 66% of respondents felt the "emphasis on vocational education should change from preparation for work to preparation for post-secondary technical education" (Senior High Review Committee, 1994, p. 60).

By linking career and technical education to general and academic streaming of students, the marginalization of CTE is complete.

> The student clientele will likely be drawn from the following groups (as they are currently known): Pre-Vocational Candidates; Integration Candidates; Industrial Arts Candidates; Potential Drop-outs; Special Education Students; and Students seeking interest courses…None of the titles listed above will be used to describe students or courses; all courses will be classified as Career Exploration Courses open to all students. (Unit 3 Pilot Project, 1989, p. 3)

Another document further marginalizes career and technical education by explaining that core curriculum would be set at one standard, and students wanting an academic credit would require some form of enrichment.

> Each course in the Program should be composed of a "core" curriculum suitable for an open level credit but having an enrichment component for those students who wish to challenge for an academic credit. (Unit 2 Vocational Education Commitee, 1991, p. 1)

The assumption that is continually being made in these examples is that career and technical education programming is not worthy of academic study, or is in some way incapable of being studied in an academic way. Herein lies the critical questions regarding what our education system values. Do we value academic education more than vocational education? Who is best served as a result of our answer? Glendenning & Hall (1988) call this to our attention in *Some New Directions Volume I and Volume II* and ask us to consider what is meant by a "vocational" course.

> The traditional view of education is content-oriented, that is, it revolves around the study of history, literature, engineering, secretarial, etc. But content can no longer be used to determine which courses are vocational. A broader definition is required for the year 2000. (p. 4)

Glendenning & Hall (1988) go on to claim that because extensive emphasis is placed on academic credits, "[a]ccess to vocational education electives is being restricted by an increase in the academic credits required for graduation from secondary school" (p. 2).

The problem is that in attempting to separate the cogitative (thinking) work from the psychomotor (doing) work, and by valuing one over the other, we create ambiguous arguments and confusing rhetoric that only serves to further marginalize and limit the potential of career and technical education. In a survey from one of the documents, 81%

of respondents agreed that “[t]he integration of academic and vocational education has the potential of making the experience of applied knowledge more accessible to academic students and at the same time making academic subjects more accessible to students concentrating on vocational education” (Senior High Review Committee, 1994, p. 60).

The argument is made that for many such young people, the approach vocational education offers is a valuable and effective way to acquire the skills and abilities that they will need to be successful in a wide range of endeavours

However, because attempts to define a role for career and technical education are constantly mixed up in the academic versus general streaming issue, students are left with a system that portrays career and technical education as a second tier option.

> A significant number of students enrolled in the academic stream may be better served by participating in a meaningful general or practical stream. For this to happen, attitudes of parents and students about the worthiness of the practical and general streams must change. (Senior High Review Committee, 1994, p. 35)

The struggle to define clearly the role for career and technical education in the PEI public school system is perhaps best illustrated by the ongoing recommendation from the two anchor documents that secondary schools should offer a wide ranging exploratory program which will allow students to explore a number of different careers and occupations. “Recommendation #6: That a compulsory course entitled "Introduction to Technology" be offered as either a full credit or half credit to all Grade 10 students” (Glendenning & Hall, 1988, p. 15).

> An Introductory Industrial Technology course will be developed for the express purpose of career exploration. The initial training objective is to provide students

> with the opportunity to explore technology and trades careers, develop foundational skills, and become aware of their own interests and aptitudes. (Trades Strategy Committee, 2005, p. 21 Section E)

Why has PEI failed to implement this when it has been clearly recommended for the past 26 years? The answer may be that the province does not value career and technical education program sufficiently enough to develop such a program, and/or there is a fundamental flaw within the recommendation itself that prevents attempts at implementing such a program. The majority of documents analysed for this thesis take care to not isolate career and technical education programs. This leads me to conclude that the public school system does acknowledge the need for career and technical education programs; however, it does not fully understand how best to integrate them into the system. Therefore, I question this recommendation's understanding of the relationship between thinking and doing, thereby preventing successful implementation and development of such a course.

So why do policies such as the PEI Trade Strategy continue to develop and make recommendations of this nature? This is where the breakdown between policy and practice seems to begin. The course recommended by both of these anchor documents sounds important and right minded. A course that allows students to explore a range of occupations while at the same time building foundational skills seems logical; however, it is important to ask some critical questions. Who is best served by this course? How would such a course be developed? What type of classroom/laboratory is required? What are the skills required of the instructor? How many careers would a student need to

explore to be successful in the course? The answers to these questions can begin to be explored through what Dewey describes as “objective conditions”.

> Objective condition(s) covers a wide range. It includes what is done by the educator and the way in which it is done, not only words spoken but the tone of voice in which they are spoken. It includes equipment, books, apparatus, toys, games played. It includes materials with which an individual interacts, and, most important of all, the total *social* set-up of the situations in which a person is engaged. (Dewey, 1938, p. 45)

A course such as this would require extensive and well defined objective conditions and would rely heavily on the instructor, curriculum, resources and materials to ensure the students’ success. What such a course does not take into consideration is the active role and subsequent experience of the learner within the program. A broad based exploratory program does not allow for the student to take ownership of their learning and fully engage in the creation of an authentic experience that has value for the learner. It also does not support the principles of continuity and interaction as positioned by Dewey (1938) as crucial when developing a program based on experience.

The principle of continuity and the principle of interaction are the two main factors to consider when determining the value of a given educational experience. The principle of interaction, “assigns equal rights to both factors in experience – objective and internal conditions” (Dewey, 1938, p. 42). Internal conditions are defined as the students and their prior experiences. The principle of continuity states that, “every experience both takes up something from those which have gone before and modifies in some way the quality of those which come after” (p. 38). No experience lives or dies onto itself; every

current experience is connected to the ones the student has already had, and will impact the experiences the student will have in the future. This argument is supported by Crawford (2009) in that knowledge acquired from experience is more difficult to define because this knowledge is not drawn exclusively from facts or books, but also from the environmental conditions in which the problem or experience is situated and does not necessarily conform to rules of abstraction.

> The current education regime is based on a certain view about what kind of knowledge is important: "knowing that," as opposed to "knowing how." This corresponds roughly to universal knowledge versus the kind [of knowledge] that comes from individual experience. (Crawford, 2009, p. 161)

A course, such as the one recommended, is destined to fail before it begins because of the failure to include the student. The goal of having students explore a variety of occupations cannot be served by a single course (110 hours), and still create an educative experience that will encourage and support the learner in a positive manner.

As a CTE curriculum specialist for the PEI Department of Education and Early Childhood Development, my colleague and I were responsible for implementing the recommendation from the *PEI Trades Strategy* into the secondary school system. As such we spoke with school principals and career and technical teachers in 2006 for reactions to the proposed Introduction to Technology course as recommended by the *Trades Strategy*. Overwhelmingly the reaction to the recommendation was negative. Principals stated that the course would not fit with their vocational plans and would conflict with their existing courses. Teachers stated that students needed a "hands-on" approach using real meaningful activities applied to the trades and thought the proposal

would not benefit students as it was trying to do too much and would end up being a textbook course (Pyke & Stephens, 2006).

The separation of thinking and doing and the subsequent marginalization of career and technical education seem to be largely the result two factors. The first is that reports and policy documents often present career and technical education as a general stream of study within the secondary school system. The second is that the system does not have a clear sense of purpose related to the implementation of career and technical programs. The theory and practice of CTE as it has emerged in the last 15 years is nowhere to be found. Thus this thesis attempts to unpack the issues and themes so that they may be debated and discussed now, in the present.

Theme 2: The Image of Career and Technical Education. The second theme to emerge from the selective coding stage concerned the multiple terms used to refer to career and technical education: vocational education, industrial arts, career exploration courses, manual training, etc. Multiple sources called for these terms to be abandoned to help improve and broaden the image of career and technical education programs. "[T]he secondary trades strategy needs a catchy "brand" that must be clearly defined and promoted as a distinct and desirable career pathway" (Trainor, 2005, p. 8). "The name 'Vocational Program,' therefore should be no longer used in reference to high school level courses; in its place the title, Career Exploration Program, should be used" (Unit 2 Vocational Education Commitee, 1991, p. 1).

The High Schools in Transition document (1994) was more specific about why the name should change as the authors felt that the "term "vocational" conveys a traditional image of a narrow range of occupations limited to the trades and industrial

sectors" (Senior High Review Committee, 1994, p. 46). This document went on to make the following recommendation.

> Recommendation 43: That the term "vocational education" be abandoned and that "career and technology education" (CTE) become the umbrella term to identify the field of studies which would encompass industrial, information and business technologies. (Senior High Review Committee, 1994, p. 46)

While I believe in and support the need to "rebrand" vocational education, doing so without clearly articulating the purpose and intent of the program is wrong minded and can lead to further ambiguity and confusion about the role and purpose of such programs. Simply changing the name of the program will not automatically re-associate people's perceptions of what is being taught and for what purpose.

Theme 3: Classification of Career and Technical Education Courses. This leads to the third theme that emerged from this data: the challenges with the content, subject matter, scheduling and coding for career and technical education programs. As a result of the recommendations from the *PEI Trades Strategy*, the Department of Education and Early Childhood Development began curriculum renewal efforts to the career and technical education course structure in the fall of 2005. Although the recommendation for the Introduction to Technology course was rejected, the department still implemented and updated 23 career and technical education courses and revised the cooperative education courses to better support career and technical education students. Figure 5 below illustrates the Career and Technical Education Framework (2011) as currently implemented in the PEI secondary school system.

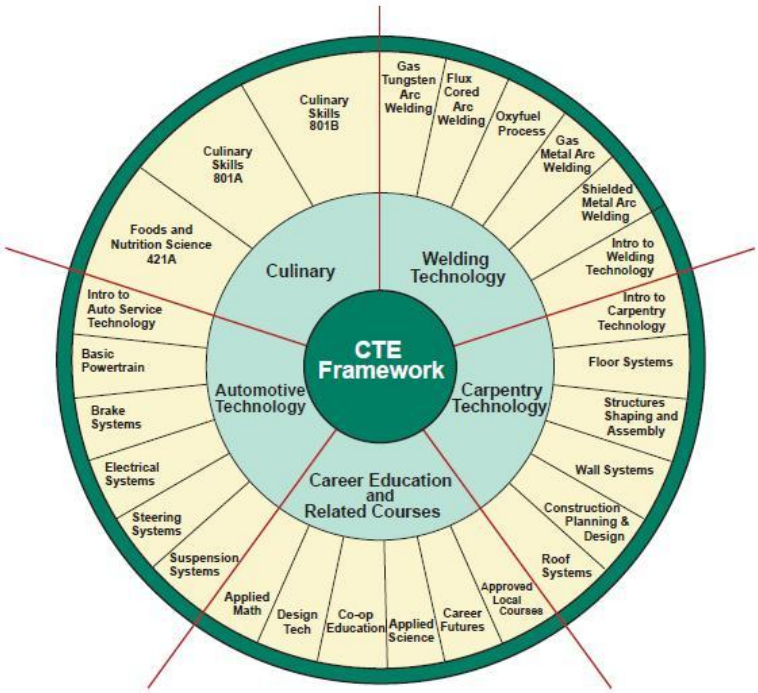

Figure 5. CTE Framework graphic developed to represent the range of CTE courses offered in PEI high schools. This graphic is found in the front matter of all CTE curriculum documents published since 2011 from the PEI Department of Education and Early Childhood Development.

The courses that students select in high school are often based on their post-secondary goals. The CTE Framework above is designed to allow student the flexibility of selecting courses that best meet their future learning goals. Whether students are planning to attend university, college, register as an apprentice or enter directly into the workforce, they can select appropriate courses. It is important to note that the following courses are considered pre-requisite to continue within a particular cluster: Introduction to Auto Service, Introduction to Welding, Introduction to Carpentry and Foods and Nutrition Science. This limits student choices and flexibility; however students are able to enrol in more than one introductory course.

PEI Graduation Requirements. Currently, to graduate from high school in PEI, students are required to complete 20 (110 hour) credits. Table 4 is the high school graduation requirements as stated on the PEI Department of Education and Early Childhood Development's website as of July, 2014. There are two notably different sets of criteria that will fulfill the requirements for a PEI High School Graduation Certificate, however: one for academic and one for career and technical. The difference between the two is one less language arts credit and one less science or social studies credit required for the career and technical track.

Table 4

Prince Edward Island High School Graduation Requirements

High School Diploma	CTE High School Diploma
A minimum number of 20 credits are required for senior high school graduation (Grade 12). These include the following compulsory credits:	For students with at least eight credits in career and technical education courses the minimum credits for graduation includes:
5 at Grade 12 level	5 courses at Grade 12 level
4 language arts, English and/or French, including a first language course at Grade 12 level	8 CTE courses 3 language arts courses incl. first language course in English or French at Grade 12 level
2 mathematics	2 mathematics courses
2 sciences	either
2 social studies	2 sciences and 1 social studies courses or 1 science and 2 social studies courses

NB. Senior high schools operate on a credit system. This allows for individualized student timetables and subject promotion. Each credit course consists of 110 hours of instructional time. The pass mark for each school subject is 50%. High schools are required to award a basic diploma to all students who meet provincial graduation requirements; however, schools may award specific diplomas or certificates to students who achieve beyond the provincial requirements. Adapted from the PEI Department of Education and Early Childhood Development Website, July 2014.

In my role as career and technical education curriculum specialist for the Department of Education and Early Childhood Development, I often received phone calls about the career and technical graduation option each year as June approached. Most of the calls revolved around which courses could be counted as a career and technical course and thereby be included as one of the eight career and technical courses required for graduation. The rationale for the two certificates is to free up more time in the timetable for students to enrol in career and technical courses; however, from my personal experience, the certificate is not often awarded and when it is, it is often to help move a student on from high school. This practice has supported the deficit view of CTE programming.

Further research is needed and data should be collected from PEI high school graduates regarding which set of graduation requirements they met and how this impacted their post-secondary choices. The existence of a second, under-utilized graduation certificate is another example of the hierarchal positioning of academic and technical education. If the intention of having two certificates is to allow technical students more time and access to relevant technical courses, then both certificates should be promoted as equals. An alternative solution, however, would be to amend the Minister's Directive on graduation requirements to allow for a student to design the most relevant and rigorous program required to meet their own learning/career plan and to issue one PEI High School Graduation Certificate that would be recognized by post-secondary intuitions.

By continuing to offer two certificates, the education system on PEI is missing the opportunity to engage in a serious debate and discussion over the value and role of career

and technical programming for youth in this province. The existence of the second certificate is a means for policymakers to acknowledge career and technical education within the system, but at the same time to avoid any meaningful discussion about it and to allow for the existing hegemony and dichotomies to exist.

Course Code Analysis. Figure 6 illustrates my analysis of the 2013/14 PEI Program of Studies (Department of Education and Early Childhood Development, 2013) by means of grade level code. It is interesting to note the equal distribution of courses between the 400, 500 and 600 level courses. When you combine the 700 and 800 level courses with their appropriate grade levels, [(400+700), (500+700+800), (600+800)] a student in Grade 10 can enrol in 29% of the courses listed, a Grade 11 student can enrol in 53% of the courses listed, and a Grade 12 student can enrol in 49% of the courses listed in the program of studies. This implies that students entering Grade 10 have fewer choices in regards to course offerings than do students in Grade 11 and 12. Having fewer choices may impact a student's ability to enrol in introductory CTE programs and may also limit the number of sections available to students at some schools.

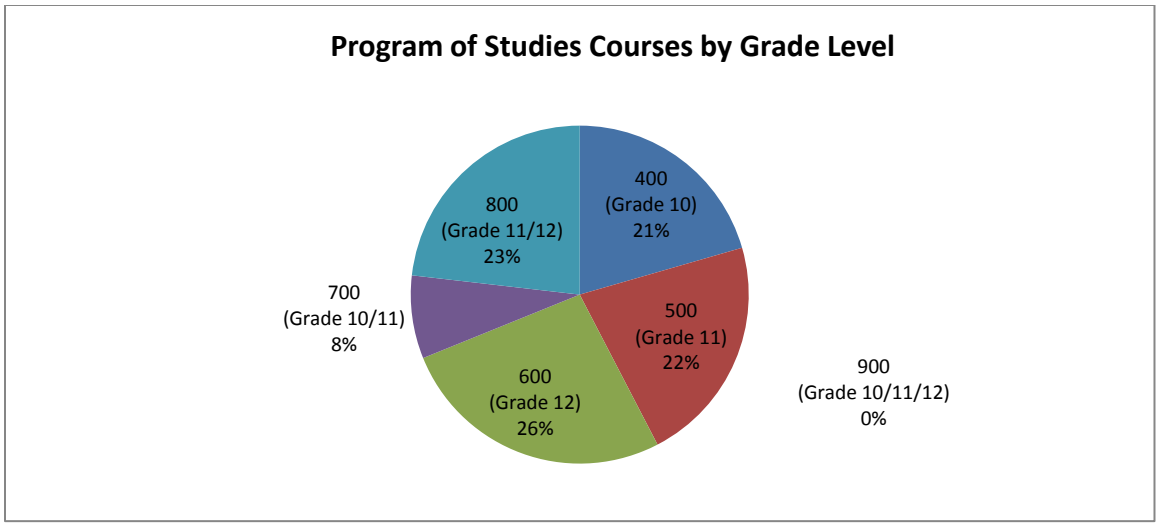

Figure 6. Grade level analysis of courses listed in the 2013/14 PEI Program of Studies (2013) .

Course Categories Analysis. Neither the Minister's Directive 11-02 (Department of Education and Early Childhood Development, 2011) nor the PEI Program of Studies (Department of Education and Early Childhood Development, 2013) defines the course categories described by the course code. This leaves the definition of Open, Academic, General, Practical and Modified courses up to interpretation. It could be argued that most people in the education field should have a good working definition of an academic course versus a general course as these terms have been used for decades to stream students in our schools. This, however, is a risky assumption as it is not clear that all educators share the same understanding of these terms. Figure 7 indicates that in my analysis of the 2013/14 Program of Studies, 38% of the courses in the program of studies are coded as "Open," but the school, teachers and students may not have a clear definition of what an "Open" course is.

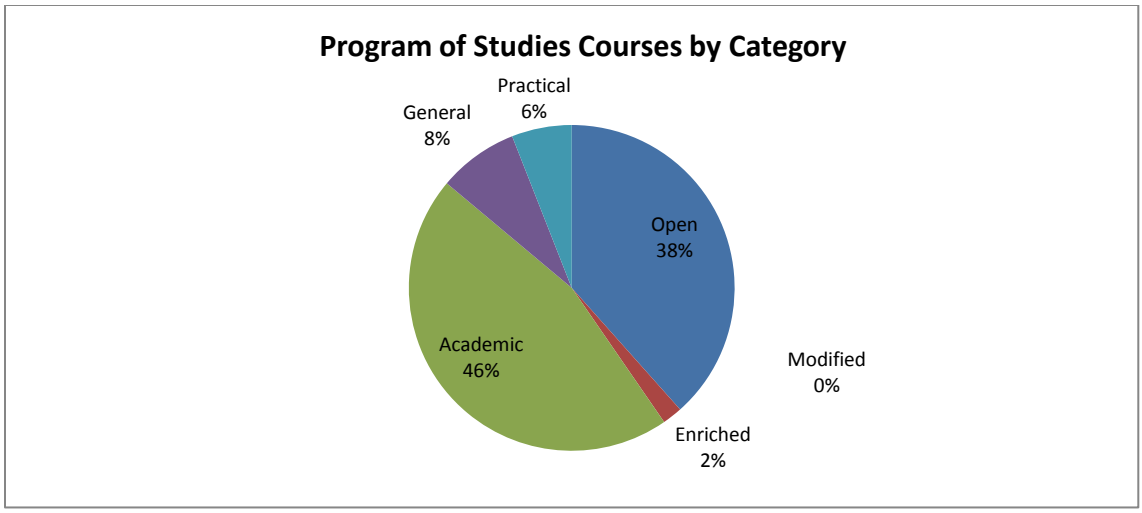

Figure 7. Course code analysis of 2013/14 PEI Senior High Program of Studies (Department of Education and Early Childhood Development, 2013).

As mentioned earlier, individual schools are responsible for publishing a course handbook. The foundation for this handbook is the Program of Studies. In reviewing all school handbooks for the 10 PEI English Language high schools, 4 of the 10 offer no definition of the course categories for students. Table 5 summarizes the range of definitions for Open level category courses. It is important to note how the definitions try to balance the idea of encouraging any student to enrol in Open coded courses with the caution of enrolling in too many.

Table 5
Description of Open Courses from High School Handbook

School	Description
School A	(Open Level) Usually means that the course varies in level of difficulty and/or is considered a worthwhile selection for any student regardless of career plans.
School B	Open - These programs are open to all students. Generally speaking, these are elective courses and are activity oriented. Students planning on attending university should limit the number of open courses to no more than 2 in grade 12.
School C	Open - These courses vary in level of difficulty and are considered a worthwhile selection for any student.
School D	Open - Courses at this level are open to all students. Generally speaking, these are elective courses and are activity oriented. These courses are not acceptable as credits for admission to university
School E	Open (0) - a course open to all students (may not be accepted by some universities or colleges)
School F	Students who complete Grade 12 with 15 credits from their Grade 11 and 12 years may have three "01" (Open) courses in this group and this may not affect any aspect of graduation such as university entrance, class ranking or honours

Alternatively, each High School Handbook includes a section or reference to post-secondary requirements. This is where the importance and value is placed heavily on the academic subjects as illustrated in Table 6. Notice the continuous connection made between academic coded courses and post secondary options and the absence of connection between open coded courses and post secondary options.

Table 6
Description Post Secondary Requirements from High School Handbook

School	Description
School A	For entrance, universities require high school applicants to have completed a minimum of five Grade 12 academic (621) courses and to have obtained a specific average in those five courses, usually 70% or better.
School B	Most Maritime universities require five grade 12 (621 or 611) academic courses for admission with a minimum average of 70%. For some programs with limited enrolment a still higher average is required. Universities usually require that these five courses be taken in the student's final year of study (grade 12).
School C	To be eligible for most universities, students should choose English, Mathematics, a Science (Chemistry, Biology or Physics), a social studies, plus one more acceptable academic elective.
School D	Most postsecondary programs at university and college require a student to have course credits at the academic level with a minimum mark of 70% for admission.
School E	Students have more opportunities following high school with academic courses than general courses. Registering in general and practical level programs should be carefully considered and discussed with counselors, homeroom teachers and/or administration.

Course Analysis by Program. The Minister's Directive 11-02 (Department of Education and Early Childhood Development, 2011) clearly identifies four subject areas as required for graduation from PEI high schools. As defined in Table 7, for the purpose of this analysis I have combined the courses from the program of studies that fall under these subject headings under the broad category heading called Minster Directive Approved Courses (MD). Furthermore, the PEI Program of Studies does not group CTE courses as defined by the ACTE or by the literature; therefore, for the purposes of the following figures and tables I have organized the subject areas defined in the 2013/14

Program of Studies that align with the 16 career clusters as defined by the ACTE, (Table 1), under the singular term CTE for the purposes of comparison.

Table 7
Organization of Courses Listed in the 2013/14 PEI Program of Studies

Courses Defined in Minister's Directive (MD)	# of courses	Course Defined as Career and Technical Education based on the ACTE Definitions (CTE)	# of courses
English	25	Business Education	5
Mathematics	15	Career Education and Personal Development	6
Science	19	Career and Technical Education	22
Social Studies	25	Communications and Information Technology	6
		Home Economics and Family Living	8

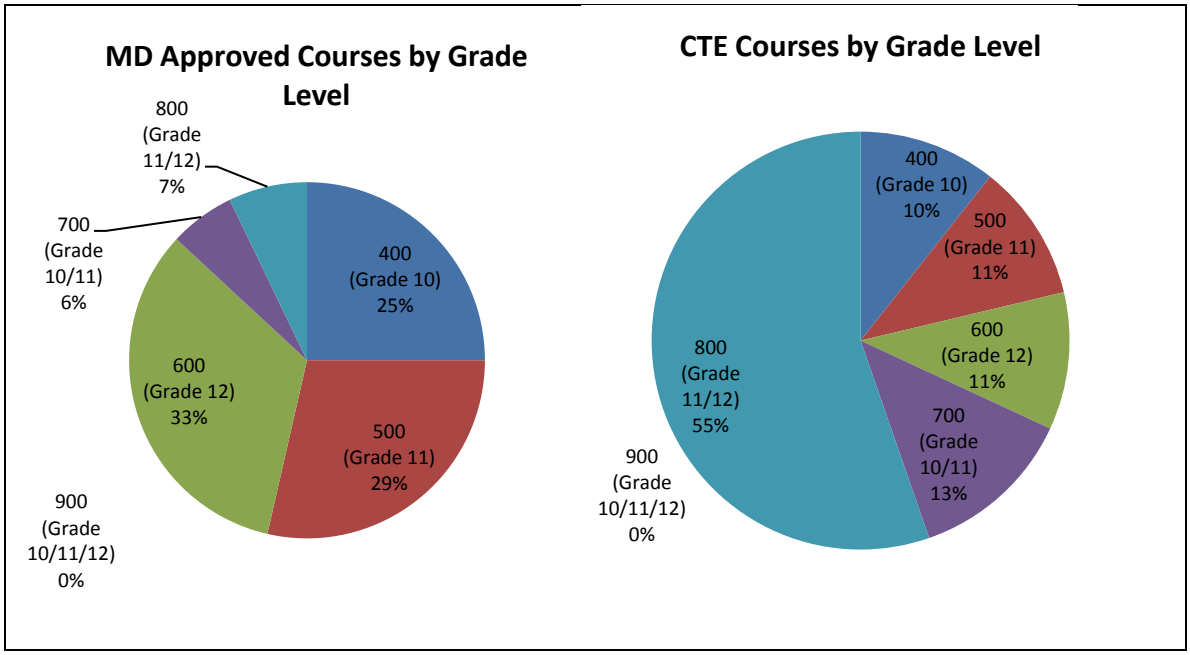

Figure 8. Grade level and course comparison. Career and technical education courses and courses defined by the Minsters Directive (MD) compared by grade level.

As indicated in Figure 8, 68% of the courses offered under CTE are listed as multi grade level courses, 700 and 800 levels, compared to just 13% of MD Approved courses. The purpose of this coding is to allow more flexibility in the timetable for students to

register for these courses as the code implies that the courses are open to students at multiple grade levels.

The challenge becomes more obvious looking at the category analysis (Figure 9) in which 75% of CTE courses are coded as “Open” courses compared to 13% of the MD approved courses. Given that there is not a clear definition of an “Open” course as described above, and that a strong priority and value is placed on 621 or 611 coded courses for acceptance to post-secondary institutions, it is not surprising that the students who wish to “keep their options open” will not select career and technical courses based solely on the coding. They are therefore effectively streamed away from the CTE courses.

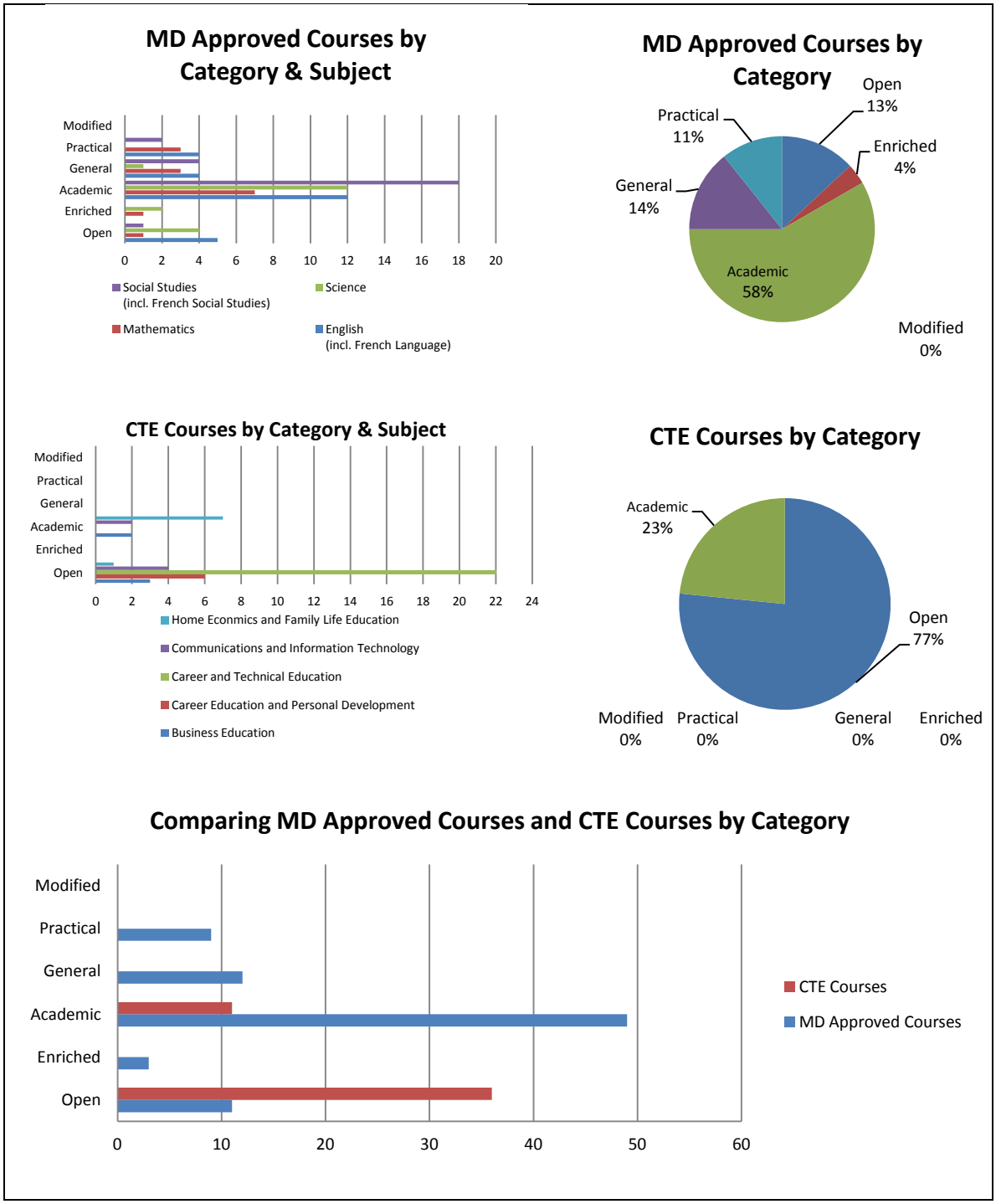

Figure 9. Category and subject comparison. Career and technical education and Minsters Directive approved course compared by course category and subject.

Critical Analysis of Course Coding. The biggest gap between our policies and our intentions exist here. As stated earlier, there was some care taken in the documents

studied so as to not understate the importance of career and technical education; however, when we begin to present our course offerings to students we begin to separate the valued courses from the not so valued. Glendenning and Hall (1988) cautioned against this, stating that university entrance requirements should not dictate graduation requirements, particularly for students for who are not planning on attending university. Furthermore, using university entrance requirements to set the standard for graduation, or course selection, will impact a student's ability to choose career and technical education courses. "The entirely laudable aim of raising standards of education by increasing the graduation requirements has had the unfortunate effect of depriving many people of the opportunity to enroll [*sic*] in vocational courses" (Glendenning & Hall, 1988, p. 6).

Throughout the 1990s and early 2000s a number of internal department documents, reports and studies were written in PEI that addressed, in part or in whole, the role of career and technical education. As always, a wide range of names were being used to describe these programs in an attempt to improve the image of vocational programs and avoid the stereotypes attached. This was challenging for the school system as it began to articulate and develop the means through which the recommendation from the Glendenning/Hall Report would be carried out. It also illustrates the point made in the first theme whereby the system began wrongfully to merge the practice of streaming students (academic, general and practical) with the career and technical education and academic education dichotomy. "In general, students who intend to study at university should obtain a minimum of 65% in five Grade 12 academic subjects (including English and Math). However, it is recommended that such students attempt 6 academic courses in both grades 11 and 12" (Bernard, 1992, p. 16).

Using the concept of streaming to integrate career and technical education into the school systems has done little to increase the image or value that is placed on career and technical education. Throughout these same documents, valuable and progressive ideas were floated that would help to address these problems, particularly as they relate to the coding of the courses. Glendenning and Hall (1988) argued that graduation requirements be written sufficiently flexible to allow students the option to select one or many vocational courses as part of their high school experience based on their interest level and learning needs. To this end it was felt that "Vocational courses *per se* should not be locked into a single level or classification. In concert with the notion of an integrated curriculum, vocational education courses should reflect levels of difficulty that parallel those of academic courses" (p. 6) and secondary vocational courses should "be designed in such a way that they may be easily integrated into the overall high school curriculum. To this end, they should be contained in at least three or four levels of difficulty to correspond with levels in other parts of the curriculum" (p. 10). The passages below indicate that attempts were made to address this within our current system, however as time moved on these suggestions were left behind.

> All Career Exploration Courses will have more than one designation with regard to course number; some examples follow: a course might be assigned one or two of the following 921 -- 931 -- 951 -- 952 or perhaps 7 and/or 8 in place of 9. (Unit 3 Pilot Project, 1989, p. 5)
>
> Each course in the Program should: be open to students at any grade level; be composed of a "core" curriculum suitable for an open level credit but having an

> enriched component for those students who wish to challenge for an academic credit. (Unit 2 Vocational Education Commitee, 1991, p. 1)

In the years following the publication of *Some New Directions* (1989) each of the four school units on PEI worked to bring some form of career and technical education into their schools. These programs tended to be developed and coded at the school level and commonly referred to as local courses. The result is best described in the *Senior High Schools in Transition* (1994) report.

> Senior high school vocational education on Prince Edward Island can best be described as eclectic. The trades and industrial programs evolved as new facilities became available. Each school unit has developed its own program in the absence of provincial direction. Hence there is a wide variation of offerings and therefore a need for provincial co-ordination. (Senior High Review Committee, 1994, p. 47)

During the planning and developing of the new CTE Framework for PEI secondary schools the concept of a dual- or multi-coded course, based on how successful the student was at meeting the learning outcomes of the course, was brought up again. It was suggested that since a passing grade of 70% is required by anyone who writes an apprentice examination, a student enrolled in a CTE course who obtained a grade of less than 70% would receive a CTE701 high school credit; however, if the student obtained a grade greater than 70%, he/she would receive a CTE721 credit that would be recognized by post-secondary and apprentice training institutions.

Based on the analysis these attempts to alter the categorization of career and technical programs did not result in any change of policy or practice, with 75% of career

and technical education courses being coded as open. However, 31% of the courses listed in the Program of Studies fall under the broad definition of career and technical education. Given that these courses are all single credit courses, (with the exception of cooperative education), and that 68% of them are multi-grade level coded (either 700 or 800), they currently are designed to allow flexible programming and scheduling for both students and schools. So despite a lack of progress on the categorization of career and technical education programs, progress has been made on making career and technical education courses more widely available and more "suitably flexible" for students. However, this is all just tinkering, as there has been no underlying and consistent theory and/or practice.

> Today in schools, the manual trades are given little honor. The egalitarian worry that has always attended tracking students into "college prep" and "vocational ed" is overlaid with another: the fear that acquiring a specific skill set means that one's life is *determined*. In college, by contrast, many students don't learn anything of particular application; college is the ticket to an *open* future. (Crawford, 2009, p. 19)

Crawford brought to light a critical point; that is, in our desire and attempt to design a school system that prepares student for their future, we often overlook, and as a result undervalue, courses which tend to narrow a student's focus. In a recent report to the Department of Education released in 2013 entitled *Recommendations of the Senior High Working Group*, one of the recommendations calls for:

> The Department, in consultation with boards and schools, to complete an evaluation of the Senior High Program of Studies for the purpose of ensuring that

> all PEI high school students have equitable access to an intellectually engaging and rigorous curriculum. (Senior High Working Group, 2013, p. 15)

In the elaboration of the recommendation the report highlights the need to develop both rigorous and relevant programming for students at all levels.

> It is essential all PEI students are exposed to both a rigorous and relevant curriculum and learning opportunities throughout their school years. However, this may not currently be the case for all PEI students, as many are enrolled in either academic, general, or practical streams in their grade 10 year and remain in these streams until graduation. Within these separate streams, there is a tremendous range in both rigor and relevance. (Senior High Working Group, 2013, p. 15)

This is an encouraging sign and a conversation in which career and technical education educators and leaders must participate.

Theme 4: Career and Technical Education Teacher Certification. In my role as the Career and Technical Education Curriculum Specialist for the Department of Education, Early Learning and Culture, I have had many opportunities to visit schools across the province. One particular afternoon I dropped by a high school to visit the CTE teachers during the lunch period. When I entered the staff room to find the instructors, I was told that they do not eat lunch there, but rather with the bus drivers. This was a rather stark example of the isolation some of career and technical educators feel and/or experience within our school system. I am not implying here that the conversations in the bus drivers' lunch room were any more or less constructive or professional than those in

the teaching staff room. However, it is symbolic of how disconnected some career and technical education teachers feel within their profession and among their peers.

This disconnection is also evidenced in the difference between how career and technical education teachers and academic teachers are certified. The Department of Education, Early Learning and Culture is responsible for the certification of teachers on PEI. The department issues one of two certificates: an Academic Certificate or a Career and Technical Education Certificate.

> The Prince Edward Island Department of Education certifies all teachers and grants licenses for the graduates of both Holland College and UPEI. Vocational teachers are given additional credits for their work experiences prior to entering the teaching profession, so their remuneration scales differ from those for academic teachers. (University of Prince Edward Island; Holland College, 2006, p. 3)

An Academic Certificate is issued to individuals who have successfully completed a recognized education program resulting in a Bachelor Degree in Education or equivalent, typically a 5 or 6 year program of study. The career and technical education teachers are certified upon recognition of their work history and 60 credits (2 years) of study in an education program. Career and technical education teachers are encouraged to complete an additional two years of study with the program to obtain their Bachelor Degree in Education, but are not required to do so.

The current pool of CTE teachers in PEI can be sorted into four distinct groups: (1) those with an industry certification (e.g., Red Seal) and an education degree, (2) those with an industry certification (e.g., Red Seal) and an education certificate, (3) those with

no industry certification and an education degree and (4) those with no industry certification and an education degree specializing in technical education. The first two groups will tend to be paid on the CTE remuneration scale whereas the final two groups will often be paid on the Academic remunerating scale.

The existence of the two separate pay scales and certification pathways is both a blessing and a curse. On the one hand, PEI has developed a viable and successful pathway to certify professionals from industry to teach at the secondary level. On the other hand, the system established a barrier between those who are certified to teach, and those who are certified to teach career and technical education.

> PEI and other provincial departments of education are recognizing the varied needs of our youth in the public school system, and it is necessary to develop a cadre of well-trained teachers with expertise in both academic and technical areas to work with these students. (University of Prince Edward Island; Holland College, 2006, p. 5)

This can become problematic, as career and technical education teachers will often identify as tradespeople first as opposed to teachers. I experienced this in a number of different ways: during one particular visit with a career and technical education teacher I asked how the implementation of the new program was working out, to which he responded by saying he was not sure – he was just teaching welding. And conversely, during a meeting with educational leaders, one school principal indicated, “These kids can’t read so I better ensure they can weld”.

A recommendation from *Some New Directions Volume I and Volume II* (1988) was to eliminate this dual pay scale and have all teachers come under a single

certification scheme. “Recommendation #13: That the certification for secondary vocational teachers be reviewed with the ultimate objective of having all public teachers under a single certification scheme” (Glendenning & Hall, 1988, p. 25). This recommendation was identified again in the *High Schools in Transition Report* (1994),

> In the Glendenning/Hall Report (1988), it was recommended that all public school teachers (including technology education teachers) come under a single certification scheme. A move in this direction could contribute to the enhancement of the image of vocational education at the high school level. (Senior High Review Committee, 1994, p. 48)

Though I agree that a move in this direction may help to enhance the image of career and technical education among education professionals, a single certification scheme would require the acknowledgement of multiple entry points into the pathway to become a teacher.

To understand fully the issues surrounding this theme a deeper analysis would be required, however, given the small sample size of CTE teachers in Prince Edward Island it would be difficult to examine the issue without identifying individual teachers. I believe a well designed research study on CTE teacher certification may uncover some deeply rooted beliefs about who career and technical education at the secondary level is designed for, the academic and CTE dichotomy, and differences in beliefs within the CTE community.

For the purposes of this study I think it is important to acknowledge that questions surrounding CTE teacher certification and who is best trained to deliver CTE programs continued to arise from the document analysed.

Theme 5: The Need for a Career and Technical Education Philosophy. The final theme to emerge as a result of the critical textual analysis was the need for an overall guiding philosophy of career and technical education. The results of this research indicate that the PEI public school system sees a need for career and technical education programs, but struggles with the implementation of these programs. The documents pointed to a lack of consistency and clarity regarding the role of CTE programs. "Vocational Education has lacked coherence across the province, and as a result there are significant variations" (Senior High Review Committee, 1994, p. 47).

The schools that made up the former Eastern School District had a developed a system of career exploration courses that allowed students to explore a variety of occupations.

> The goals and objectives of Career Exploration Courses are based on knowledge and skills drawn from specific occupations in the world of work. …The general purpose of each course (CEC) is to provide students with opportunities to explore the world of work and to have students develop introductory skills associated with specific careers. (Bernard, 1992, p. 4)

Compare this to schools in the former Western School Board, in which students were provided the opportunity to enrol in as many as eight credits specific to a single trade or occupation.

> As the Western School Board looks into the future and the renewed interest in trades and technical related careers, Westisle Composite High School is interested in pursuing programs that may be of more personal interest and better prepare students for the world of work and/or post-secondary studies. (Millar, 2007, p. 1)

The lack of a guiding philosophy upon which to build career and technical education programs is highlighted in the struggle to find the balance between broad based exploration of skilled occupations and that of developing specific skills. The question posed is, should high school students in PEI study programs that will give them a little experience in, and knowledge of, a lot of occupations, or should they be given a rich experience, and a lot of knowledge, in a small number of occupations? Crawford (2009) argues that the current idealism within our economic system is one that values the ability to change and adapt over the ability to be highly skilled. He argues that the scientific management system trends to break down highly skilled tasks into smaller, simpler tasks that can be performed by low-skilled worker and/or machines and has led to the degradation of blue collar work, the de-skilling of manual labour, and the unfortunate dichotomy of blue collar versus white collar.

> Most people take pride in being good at something specific, which happens through the accumulation of experience. Yet the flitting disposition is pressed upon works from above by the current generation of management revolutionaries, for whom the ethic of craftsmanship is actually something to be rooted out from the workforce. Craftsmanship means dwelling on task for a long time and going deeply into it, because you want to get it right. (Crawford, 2009, p. 20)

Three of the documents researched recommended that PEI establish a clear vision and/or philosophy for career and technical education programs. The first of these documents was *Some New Directions Volume I and Volume II* (1988). "Recommendation #1:That the Department of Education enunciate a philosophy for vocational high school

education and set out a series of policy statements to guide its development and delivery" (Glendenning & Hall, 1988, p. 5).

Six years later, the same recommendation is being made. "Recommendation 44: That the Department of Education provides a framework for CTE in senior high schools through the articulation of a policy statement with guiding principles" (Senior High Review Committee, 1994, p. 47). Four years later, another report is recommending the Department develop policy and support documents for CTE.

> Recommendation 14 - A consultant be employed and given the responsibility to coordinate and review existing offerings and spearhead the development of new Apprenticeship, C.E.C., and C.T.S. offerings as well as review and develop guidelines and supports for all work related programs. (PEI Department of Education, 1998, p. 12)

In 2015, there is still no clearly articulated vision or philosophy for career and technical education in PEI's public school system. This finding and recommendation is critical if the province is to establish a clear set of parameters on which to base decisions and discussions regarding policy, curricula, funding and human resources. The lack of a clearly articulated philosophy of career and technical education for the province of PEI is preventing students, schools and teachers from realizing the full potential and opportunities that exist within these areas. "The cornerstone of any major program or curriculum initiative at the transition level must rest on the Prince Edward Island Philosophy of Education, the Essential Graduation Learnings and current labor market requirements." (PEI Department of Education, 1998, p. 4)

The importance of having a well defined philosophy of career and technical education for PEI public schools cannot be understated. Such a philosophy would provide the PEI public school system with a means to evaluate the successes and shortcomings of CTE programs and curricula. It would also provide CTE professionals an important tool to help them engage in a critical pedagogy related to CTE by asking whose interests are being served, who is being marginalized, and what action is being taken to address issues of access and inequality. "All principles by themselves are abstract. They become concrete only in the consequences which result in their application" (Dewey, 1938, p. 20).

Summary of Findings

The previous section provided an overview of the major findings from the critical textual analysis. The two anchor documents that emerged as having the most impact on career and technical education for PEI in the past 26 years were the *PEI Trades Strategy* (2005) and *Some New Directions Vol. 1 and Vol. 2* (1998). The critical textual analysis resulted in five themes related to the role of CTE in the secondary school system: (1) the separation of thinking and doing, (2) the image of career and technical education, (3) the classification and coding of career and technical education courses, (4) career and technical education teacher certification and (5) the need for a career and technical education guiding philosophy for Prince Edward Island.

When the five themes are taken together they point to a lack of direction in theory and practice and to both philosophical and structural challenges within the PEI public school system. The analysis did not yield a clearly indicated role for CTE programs within the secondary system; rather, the most consistent message was that career and

technical education programs should be exploratory by design. This exploratory nature is often interpreted as a less rigorous or non-academic learning environment, as evidenced by the course coding and synonymous use of the terms general stream and technical education. This presents a significant challenge to the implementation of rigours career and technical education programs and is where the questions surrounding value begin to emerge. Career and technical education has struggled for parity in Canada's education system, as explained in earlier chapters. PEI has not met this challenge. "Historically vocational education has not been viewed as part of general education. This may have contributed to the perceived second-class status of vocational education" (Glendenning & Hall, 1988, p. 2).

The next chapter will deepen the discussion of the value of career and technical education programs in the PEI public school system and will explore possible recommendations and future research connected to clarifying the role, and increasing the value, of CTE within the PEI public school system. This discussion will focus on themes uncovered through this thesis with the aim of establishing a base upon which interested parties can begin to envision and debate career and technical education programming in the future. In establishing this base it will be important to not lose sight of teachers and students who are ultimately responsible for the success of failure of any proposed system.

> Achieving a high quality vocational education system assumes high quality and effective vocational teaching and learning. Research has told us that the quality of teaching is the key factor in improving learner achievement and a recent review of 20 of the world's top education systems concluded that the quality of an education

system cannot exceed the quality of its teachers. (Faraday, Overton, & Cooper, 2011, p. 5)

Discussion

Deepening the Conversation

I used to own a small motorcycle, a Honda CBX550. It was a great bike to learn to ride on and gave me a lot of freedom and laughs. When you are in your late teens and early 20s, the vehicles you purchase tend not to be the most reliable. This was the case with my motorcycle. In fact, when I purchased the bike, it came with a second bike, which consisted of an empty frame and about three cardboard boxes of parts.

One day while driving along a stretch of the Trans-Canada highway my bike quit and would not restart. I had the bike loaded with most of my possessions as I was moving to a new town to attend school. This was not the first time the bike had quit running; I was expecting something like this might happen on my ride. I was not exactly sure of the problem, but I knew it was something in the fuel delivery system, and in particular, the carburetors. So while I was packing to move I went through the old boxes of parts and packed the extra set of carburetors and a small set of tools.

So there I was on the side of the road; my plan was simple enough – pull the set of carburetors off the bike and replace them with the set in my backpack. Now to get the carburetors off the CBX550 I needed to remove a large number of parts, (the seat, fenders, fuel tank), loosen a series of nuts and bolts, and perform a complicated series of twisting and pulling motions to remove the carburetors from the frame. I am sure there was a simpler way, but at this stage I was improvising. It was around this time that a small group of bikers pulled up. They saw the gas tank and other parts scattered on the shoulder of the road, not to mention the carburetors hanging awkwardly out the side of the frame, and they asked if I needed a ride to town. After a sideways glance at the scene

around me, and a passing thought to Pirsig's (1974) account of classical understanding versus romantic understanding, I politely refused and watched them ride off.

A couple of hours later, armed with significantly more intimate knowledge of my bike, a deep sense of accomplishment, and a few extra nuts and bolts (mildly worrisome), I was back on the road.

I believe we all have stories like this one; experiences in our lives where we had to actively engage our hands in order to think through a problem. I also believe that when we are involved in such activities that require both psychomotor and cognitive engagement, the possibilities for valuable educative experiences increases.

Conclusions and Directions

The purpose of this thesis was to explore the relationship between academic education and career and technical education in the Prince Edward Island public school system. The two main goals defined by the thesis statement were (1) to indicate how and where in our policies, documents, conversations and practice the dichotomy between thinking and doing exists, how it may be helpful and/or harmful to our students and (2) to open a critical dialogue on the theory and practice of career and technical education in our public school system to make an argument for positioning academic and career and technical education as equally valuable pathways for students. This work could help to overcome the traditional hierarchy in which academic programs rank in value and number above career and technical programs.

This thesis suggests that such work will make for improved CTE programs and curricula where the false dichotomy between thinking and doing is exposed. This could provide a full and robust education to today's youth. Below I present the lessons and

directions in relation to the literature and thesis data, what is the same and/or different from the scholarship on CTE and show this study's contributions and recommendations.

The results of the critical textual analysis show that the public education system on PEI has struggled to define a clear role for career and technical education. The results of the analysis indicate that the dichotomy between career and technical education and academic education as prevalent throughout the guiding documents. This often results in career and technical education being presented as a relative deficit for students in comparison to academic programs. Though care was taken in the documents to acknowledge a role for career and technical education, that role was more often than not linked to a pathway for general, practical and in some instances less capable students. This separation was clear in the coding of high school credits and the value placed on ensuring a student with post-secondary aspirations has a full transcript of "academic credits." For example, the deficit view of career and technical education exists in that 75% of CTE course are coded as "Open" course codes. This "Open" code is not clearly defined by the Department of Education, Early Learning and Culture and is inconsistently communicated to students in the High School Handbooks.

That PEI has struggled to articulate clearly the role for career and technical education within the public school system is consistent with the literature in which career and technical education is most often presented as education for the working class or second class citizenry (Lyons, Randhawa, & Paulson, 1991), (Smaller, 2000), (Taylor, 2006). Furthermore, the PEI documents often attempted to define the role for CTE programs as exploratory without further elaboration on the nature of the programs or the impact on student learning.

Imagine exploring a new city by air as opposed to by bus. From the air you get an overview, a visual of the size, layout, and arrangement of the city. From the bus, you see more details, you take in more of the smells, textures, and sounds of the landscape, you are able to engage more with the people of the city and develop a deeper a sense of space. Both experiences remain peripheral, and by extension exploratory in nature. The question remains: which is a better experiential model for career and technical education within the public school system – an airplane ride or a bus ride?

The bus ride provides more opportunity for richer experiences, deeper exploration and more powerful learning. We cannot expect students to be able to develop an awareness of and appreciation for the rigor and skill required of a skilled occupation by engaging in broad-based exploratory programming. I believe it is better to provide students with the experience of driving deep into a subject or area, thereby giving them a more authentic experience. This allows students to develop an appreciation of the time, practice, skill and rigor required to be successful within a given occupation. This also provides students with the opportunity to engage in real world problems, thereby developing the tactile skills and transferable skills required to be successful within today's labour market. By allowing students to focus in a particular area for exploration the false dichotomy between thinking and doing is exposed and the learning environment becomes richer. Teachers and students enter into authentic learning experiences that require the active application of both knowledge and skills.

A report commissioned in the United Kingdom entitled, *Effective teaching and learning in vocational education*, "...aimed to promote more effective teaching and learning in vocational education, by encouraging thought, debate and discussion about

vocational pedagogy" (Faraday, Overton, & Cooper, 2011, p. 1). Two of the 11 main findings from the report concluded that:

> Teachers believed that in many cases, practice is directly transferable from one vocational area to another. ... In the very best sessions, teachers had high aspirations and sought to stretch their learners. They planned to develop a range of learners' skills beyond just mastering a particular skill or acquiring information to meet a course or qualification specification. These skills included higher order learning and thinking skills (such as 'advance organisers' and learning to learn), social and interpersonal skills to communicate effectively and employability skills. These were consistent with the skills for the 21st century, as described in the literature review. (p. 3)

To make this a reality, policy makers and educators must stop equating career and technical education with a general education as defined by the practice of streaming, which results in the separation of thinking from doing. The *High Schools in Transitions: New Challenges, New Directions* document attempted to open discussions within the PEI secondary school system to raise the profile of students choosing to enter directly into the labour market from high school.

> ... most would agree that a better and more relevant curriculum, a greater focus on school to work transition skills, more information and support personnel to help with employment options and opportunities, more inclusion into the school community and a greater respect for those students who, for whatever reason, decide to join the workforce sooner rather than later are all desirable. (PEI Department of Education, 1998, p. 3)

One recommendation stemming from this thesis is for the Department of Education, Early Learning and Culture to move toward adopting the 16 strands of career and technical education as defined by the Association for Career and Technical Education (ACTE) as a framework for organizing CTE programs in the provincial Program of Studies and High School Handbooks. The current structure of the Program of Studies fragments career and technical programs and as a result positions them in conflict with each other. This limits the potential of career and technical programs for students as programs are being developed in isolation and the interconnectivity of the programs is not made apparent for the learners or the education system.

Career and technical education programs must be inclusive of all learners despite assumptions regarding their backgrounds or interests. This can be achieved by celebrating success in career and technical education as proudly as we do academic success, promoting career and technical education programs for all learners, and ensuring flexibility within the program design to allow more students the option to enrol. Career and technical education teachers and leaders must constantly strive to improve programming through professional development and focused research within the discipline. Instead of a system designed to separate thinking from doing we must work to build a system that engages the hands to activate the mind.

A key piece missing from the puzzle is the lack of a clear vision and philosophy upon which to support career and technical education programs. The website for the Prince Edward Island Department of Education and Early Childhood Development defines the following as the current vision for the department.

> Prince Edward Island is a place where learning is highly valued. All individuals have the opportunity to develop their full social, intellectual, economic, cultural and physical potential. The Department of Education and Early Childhood Development is the leader in ensuring equitable opportunities for lifelong learning. (PEI Department of Education and Early Childhood Development, 2014)

While this vision is broad enough to cover both academic and career and technical education in theory, it does nothing to indicate the actual effects on students or student achievement. An overarching vision such as this provides the existing hegemony the power to dissimulate and obscure the differences that exist between academic and career and technical education thereby allowing the dominate view of "full social, intellectual, economic, cultural and physical potential" to remain in control, while the sub-dominant view of career and technical education is left to struggle for meaning.

> The traditional school could get along without any consistently developed philosophy of education. About all it required in that line was a set of abstract words like culture, disciple, our great cultural heritage, etc., actual guidance being derived not from them but from custom and established routines. (Dewey, 1938, p. 28)

Though career and technical education is not a new phenomenon within our public school system, it struggles for parity within the dominant culture of academics. The lack of a clear vision forces career and technical education programs to exist within the public school system in a rather haphazard and reactionary manner. This prevents career and technical education from developing any firm base within the school system

and leaves it vulnerable to the ebbs and flows of change as opposed to being an active agent of change. Be it external factors, testing results, labour market demands, changes in government, or policy documents developed without consultation, career and technical education is left to navigate the margins of the school system and is without a set of guiding principles or compass.

It is critical to acknowledge that the development of a sound vision and philosophy of career and technical education be based firmly and solely on the grounds of that which it offers to the school system. It must be developed on the existing and potential strength of CTE programs and the value they provide to students. It is the responsibility of those within the discipline to engage in the hard work of positioning career and technical education as an equal and relevant partner within the public school system.

> There is always a danger in a new movement that in rejecting the aims and methods of that which it would supplant, it may develop its principles negatively rather than positively and constructively. Then it takes its clues in practice from that which is rejected instead of from the constructive development of its own philosophy. (Dewey, 1938, p. 20)

I am not proposing that career and technical education should work to "supplant" academic education, but rather that it work to carve out its rightful place within our system on the grounds of what it offers the system, not on how it is different.

One of the core issues researched and supported by the National Research Center for Career and Technical Education (NRCCTE) is curriculum integration. I believe this

is an appropriate example and model that may support a renewed vision and philosophy for CTE in the PEI public school system.

> The NRCCTE's curriculum integration models embody a contextualized approach to integration, the genesis and focus of which is the CTE content. Contextualized teaching and learning does not require the sacrifice of CTE content or the addition of artificially imposed academic content. Rather, the academic concepts resident in authentic applications of CTE support the understanding of both. (National Research Center for Career and Technical Education, 2015)

The development of a clear vision and philosophy for career and technical education on PEI will provide the direction and background needed to address the other critical issues raised within this research. An articulated philosophy will clarify the purpose of career and technical education and allow for consistency within our policies, documents, and communications with students. It will provide clarity around how best to code and classify programs so that students may get the most out them, and will inform policy makers within the areas of teacher certification, facility upgrades, and legislation.

Development of a vision and philosophy for CTE needs to begin through consultation with the career and technical education teachers and evolve from the classroom. It needs to be rooted in the experiences of career and technical education at the secondary level. There are well established career and technical education courses and programs in a number of Island schools, but these programs seem to be in a constant state of uncertainty. This is due to lack of consultation and engagement of career and technical educators and leaders on educational policy documents. None of the documents in this analysis made reference to consulting with career and technical educators prior to

publication with the exception of *Some New Directions Volume I and Volume II* (Glendenning & Hall, 1988).

Future directions worth exploring include one in which the University of Prince Edward Island (UPEI), through Faculty of Education BEd, MEd, & PhD programs, continue to encourage research into career and technical education in Prince Edward Island. The lack of scholarship related to career and technical education in the Maritime region and in Canada was apparent in the literature review and there is an opportunity for an institution such as UPEI to build expertise and leadership in the discipline. Future qualitative studies focusing on the stories of both past and present career and technical education teachers and leaders should be encouraged to document beliefs, experiences and ideas related to the field. Quantitative and qualitative studies into factors that affect a student's decision to enrol in career and technical education programs, and longitudinal studies into how high school career and technical programming impacts student achievement and success in the years after graduation, would provide evidence for the continued development of rigorous career and technical education programming. Research into educational practices, curriculum theories, learning theories and educational philosophies, though the lens of career and technical education would provide evidence based support for CTE teacher education and professional development.

I encourage my fellow career and technical education teachers to continue to engage in the profession as both learners and leaders. The literature indicated that there are differences within the CTE community on how best to position the discipline in the future. It is time we engage in these debates as professionals and do the hard work needed to find common ground. Critical pedagogy challenges career and technical

educators to recognize where we perpetuate the marginalization of our programs though our own actions. It also provides us with a means to challenge and actively engage the systems of dominance through praxis and reflection. My hope is this thesis has served both as a beginning and an invitation to what is a long overdue conversation.

Epilogue

Resurrecting the Shop

The day after my grandfather's funeral I took some time to visit "The Shop." He had not used it much in the last few years of his life. The staircase was slightly more treacherous then I remembered and a colony of bats now resided in the space between the ceiling and the roof coverings – an indication of the lack of activity. I reached under the roof gutter without really thinking – sure enough the key was still hanging from the rusty old nail. Inside "The Shop," little had changed since my last visit except for the film of rust that now covered some of the machine surfaces. When I looked at the jury-rigged switch and light on the old band saw, my memories stirred. I packed up some of the old hand tools and brought them home to my own shop, the power tools went to other members of the family, and the old workbench was bequeathed to my granddad's close friend who had helped him build it. I'm not sure what is going to become of The Shop. There is no one home now who is interested in the work required to keep it going. In reflecting on this I cannot help but wonder if a possible reason for this is a result of a shift in our values – maybe the Shop is another victim, and reminder, of the separation of thinking from doing.

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Appendices

Appendix A – Open Coding Stage

Open Coding Frame

1.	**Document Title**	
2.	**Author(s)**	
3.	**Year of Publication**	
4.	**Intended Audience**	
5.	**Does the document specific reference to the PEI public secondary school system?**	☐ Yes (code yellow then go to 6) ☐ No (go to 7) ☐ Can't Tell (go to 7)
6.	**Indicate which time period best describes when the document was published**	☐ Pre-2003 ☐ 2004 – 2006 (*PEI Trades Strategy*) ☐ 2007 – present
7.	**Is the document published by a special interest group**	☐ Yes (code red then go to 10) ☐ No (go to 8) ☐ Can't Tell (go to 8)
8.	**Is the document published by another jurisdiction in Canada?**	☐ Yes (code red then go to 10) ☐ No (go to 9) ☐ Can't Tell (go to 9)
9.	**Is the document published by a jurisdiction outside of Canada?**	☐ Yes (code red then go to 10) ☐ No (go to 10) ☐ Can't Tell (go to 10)
10.	**Is the document and academic article specifically related to CTE?**	☐ Yes (code Blue then go to 11) ☐ No (go to 11) ☐ Can't Tell (go to 11)
11.	**Is the document an academic article related to qualitative research methods and/or methodologies?**	☐ Yes (code Green then stop) ☐ No (go to 12) ☐ Can't Tell (go to 12)
12.	**Is there any other evidence indicating the document should be included in the research?**	☐ Yes (indicate below) ☐ No (remove document from research)
	Evidence	

Open Coded Document List

	Title	Author/Source	Publication Date	Assigned Code
1	Articulated Bachelor of Education Human Recourse Development Specialization B.ED (HRD)	(University of Prince Edward Island; Holland College, 2006)	2006	Yellow
2	Trades Training for Secondary Schools -- Research and Recommendations	(Trainor, 2005)	2005	Yellow
3	High Schools In Transition	(Senior High Review Committee, 1994)	1994	Yellow
4	Some New Directions Volume2 Recommendations	(Glendenning & Hall, Some new directions volume 2: Recommendations, 1988)	1988	Yellow
5	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS	(PEI Department of Education, 1998)	1998	Yellow
6	Grey Documents	1989-2008	Pre 2003	Yellow
7	Unit 3 Pilot Project Career Exploration Courses	(Unit 3 Pilot Project, 1989)	1989	Yellow
8	Unit 2 Vocational Education Committee Recommendations	(Unit 2 Vocational Education Commitee, 1991)	1992	Yellow
9	Career Exploration Courses	(Bernard, 1992)	1992	Yellow
10	Grey Documents (2003-2007)	1989-2008	2003	Yellow
11	Evaluation of the New Trades Training Model Implementation at Holland College	(Fogarty & Caiger, 2007)	2007	Yellow
12	Intermediate Program of Studies 2012/13	(Department of Education and Early Childhood Development, 2012)	2012	Yellow

13	Senior High Program of Studies 2013/14	(Department of Education and Early Childhood Development, 2013)	2013	Yellow
14	Westisle Composite High School Technical/Trades-Related Program Opportunities	(Millar, 2007)	2007	Yellow
15	Prince Edward Island Trades Strategy	(Trades Strategy Committee, 2005)	2005	Yellow
16	Beyond 2000 A Study of Vocational Education For Prince Edward Island	(Glendenning & Hall, 1988)	1988	Yellow
17	Proceedings of the Minister's Summit on Learning	(Department of Education and Early Childhood Development, 2010)	2010	Yellow
18	A Reaction to the Report Vocational Education on Prince Edward Island "Some New Directions"	(PEI Teachers Federation, 1989)	1989	Yellow
19	Excellence in Education: A Challenge for Prince Edward Island	(Kurial, 2005)	2005	Yellow
20	Response to the PEI Excellence in Education: A Challenge for Prince Edward Island	(PEITF School Counsellors Association, 2005)	2006	Yellow
21	Towards Excellence: Final Report on the Structure and Governance of the PEI Educational System	(Fogarty, 1993)	1993	Yellow
22	Roundtable on Occupational Training Within the Secondary School System	(Scott, 2003)	2003	Yellow
23	Meeting the Needs of Education, Health	(Willis & Miles, 2010)	2010	Yellow

	and Community in Eastern Kings			
24	Home Economics Program Review	(Home Economics Program Review Committee, 1996)	1996	Yellow
25	Transition From School to the Trades	(PEI Apprenticeship Board, 1990)	1990	Yellow
26	Restructuring Apprenticeship Training	(MacDonald, 2004)	2004	Yellow
27	Path to Success: Testing a New Approach to Apprenticeship Training	(PEI Apprenticeship Board, 2007)	2007	Yellow
28	Pathways to Prosperity	(Harvard Graduate School, 2011)	Feb. 2011	Red
29	Connected Students: The Key to School-Initiated Graduation Rate Improvement	Doug Manning	2005	Red
30	Learn Canada 2020	(Council of Ministers of Education Canada, 2008)	Apr. 2008	Red
31	Rigor and Relevance	(Brand, 2003)	Apr. 2003	Red
32	Remaking career and technical education for the 21st Century	(Kazis, 2005)	Apr. 2005	Red
33	21st Century Learning: Research, Innovation, and Policy	(Centre for Educational Research and Innovation, 2008)	2008	Red
34	The Development of Industrial Arts in Nova Scotia 1876-1965	(Sutherland, 1967)	March 1967	Red
35	ACE IT: A New Industry Certification Program for BC High Schools	Industry Training Authority (ITA)	2005	Red
36	Teacher Certification in Saskatchewan	Saskatchewan Teachers' Federation	August 2008	Red
37	Teaching Technological Teachers in Ontario: Addressing the	Bob Corney, Michal Scott/The Ontario Council for Technology	Nov. 2005	Red

	Needs of the Profession of Technological Education	Education		
38	Pathways for Youth to the Labour Market: An Overview of High School Initiatives	(Taylor, 2007)	Apr. 2007	Red
39	Vocational Education in Ontario's Secondary School Schools: Past, Present – and Future?	(Smaller, 2000)	Apr. 2000	Red
40	What is Career and Technical Education	(Association for Career and Technical Education, 2011)	Downloaded from website 2011	Red
41	The Connection to the 21st Century Workforce: Technology and Engineering Education	(International Technology Education and Engineering Educators Association, 2011)	2011	Red
42	Up to the Challenge: The Role of career and technical education and 21st Century Skills in College and Career Readiness	(Association for Career and Technical Education; National Association of State Directors of Career Technical Education; Consortium and Partnership for 21st Century Skills, 2010)	2010	Red
43	Dropping Out of High School and the Place of Career and Technical Education: A Survival Analysis of Surviving High School	(Plank, DeLuca, & Estacion, 2008)	Oct 2005	Red
44	Building Academic Skills in Context: Testing the Value of Enhanced Math Learning in CTE	(Stone, Corinne, Pearson, Lewis, & Jenson, 2006)	July 2006	Red
45	From Industrial Arts to Technology Education: The Search for Direction	(Herschbach, 1997)	1997	Blue

46	An Evolving Set of Values-Based Principles for Career and Technical Education	(Martinez Jr, 2007)	2007	Blue
47	The Gary Plan and Technology Education: What Might Have Been?	(Volk K. S., 2005)	2005	Blue
48	An Assessment of the Historical Arguments In Vocational Education Reform	(Hyslop-Margison, 1999)	1999	Blue
49	Revamping CTE's Image	(Emeagwali, 2011)	April 2011	Blue
50	Content or Process as Approaches to Technology Curriculum: Does it Matter Come Monday Morning?	(Lewis, 1999)	1999	Blue
51	Epistemological Beliefs of Engineering Students	Bethany King, Susan Magun-Jackson	2011	Blue
52	Critical Thinking in Career Education: The Democratic Importance of Foundational Rationality	(King & Magun-Jackson, 2009)	2004	Blue
53	Current Profile of CTE and Non-CTE Students: Who Are We Serving?	(Palmer & Gaunt, 2007)	2007	Blue
54	Students' Attitudes Toward STEM: Development of an Instrument for High School STEM-Based Programs	(Mahoney, 2010)	2010	Blue
55	The Neglected Majority – Revisited	(Stone J. , 2005)	2005	Blue
56	Industrial Arts Revisited: An Examination of the Subject's Continued Strength, Relevance and Value	(Volk K. , 1996)	1996	Blue

57	Trends in career and technical education Research	(Rojewski, Asunda, & Kim Jung, 2008)	2008	Blue
58	The Contradictory Location of High School Apprenticeship in Canada	(Taylor, 2010)	2010	Blue
59	Maximizing the Learning Value of Tests in Technology Education Classes: A Summary of Research Findings	W.J.Haynie III / The Technology Teacher	2008	Blue
60	The Educational Philosophies of Training and Development Professors, Leaders, and Practitioners	(Spurgeon & Moore, 1997)	1994	Blue
61	Productivism and the Product of Paradigm in Technological Education	(Elshof, 2006)	2006	Blue
62	Earning Industry-Recognized Credentials in High School: Exploring Research and Policy Issues	(Castellano, Stone, & Stringfield, 2005)	2005	Blue
63	Exploring the Intellectual Foundation of Technology Education: From Condorcet to Dewey	(Chafy, 1997)	1997	Blue
64	The Potential of Vygotsky's Contributions to our Understanding of Cognitive Apprenticeship as a Process of Development in Adult Vocational and Technical Education	(Bockarie, 2002)	2002	Blue
65	Revisiting Piaget and Vygotsky: In	(Verillion, 2000)	2000	Blue

	Search of a Learning Model for Technology Education			
66	Secondary to Post-secondary Technical Education Transitions: An Exploratory Study of Dual Enrollments in Georgia	(Harnish & Lynch, 2005)	2005	Blue
67	The Nomenclature Dilemma Facing Technology Education	(Spencer & Rogers, 2006)	2006	Blue
68	Have We Made Progress? Stakeholder Perceptions of Technology Education in Public Secondary Education in the United States	(Wright, Washer, Watkins, & Donald, 2008)	2008	Blue
69	New Paradigm or Old Wine? The Status of Technology Education Practice in the United States	(Sanders, 2001)	2001	Blue
70	Improve or Perish, Revisited – Again	(Moye & Katsioloudis, 2011)	2011	Blue
71	Proof that Working with your Hands is Good for Your Mind	(Johnson R. , 2008)	2007	Blue
72	Model Program: Technological Education in Ontario Schools	Carmen Camuti	2008	Blue
73	From Industrial Arts to Technology Education: The Eclipse of Purpose	(Herschbach, 1997)	1997	Blue
74	Art and Experience: Lessons from Dewey and Hawkins	(Janesick, 2008)	2008	Blue
75	A Theoretical Framework to Guide the Re-Engineering	(Kelley & Kellam, 2009)	2009	Blue

	of Technology Education			
76	Technology Education in Prospect: Perceptions, Change, and the Survival of the Profession	(Karnes, 1999)	1999	Blue
77	Dewey's Theoretical Literacy: Past, Present, and Future	(Braudy, 2004)	2004	Blue
78	How Dewey Lost: The Victory of David Snedden and Social Efficiency in the Reform of American Education	(Labaree, 2010)	2010	Blue
79	Secondary Agricultural Science as Content and Context for Teaching	(Roberts & Ball, 2009)	2009	Blue
80	Constructivism: The career and technical education Perspective	(Doolittle & Camp, 1999)	1999	Blue
81	The School is the Problem, Not the Solution	(Schrag, 2008)	2008	Blue
82	Where are We? Finding Common Ground in a Curriculum of Place.	(Chambers, 2008)	2008	Blue
83	Effects of Modular Technology Education on Junior High Students' Achievement Scores	(Culbertson, Daugherty, & Merrill, 2004)	2004	Blue
84	Effects of Test Taking on Retention Learning in Technology Educaiton: A Meta-Analysis	(Haynie, 2007)	2007	Blue
85	Curriculum Leadership: New Trends and Career	(Berkins, 2008)	2007	Blue

	and Technical Education			
86	John Dewey's Racialized Visions of the Student and Classroom Community	(Margonis, 2009)	2009	Blue
87	John Dewey (1859-1952)	Robert B. Westbrook	1993	Blue
88	The Development of Vocational Education in Canada	(Lyons, Randhawa, & Paulson, 1991)	1991	Blue
89	My Pedagogic Creed	(Dewey, 1897)	1897	Blue
90	Public Life: A Contribution to Democratic Education	(Kaplan, 1997)	1997	Blue
91	Problem Solving in Real-Life Contexts: An Alternative for Design in Technology Education	(Hill, 1998)	1998	Blue
92	Cooking as Inquiry: A Method to Stir Up Prevailing Ways of Knowing Food, Body, and Identity	(Brady, 2011)	2011	Green
93	(De/Re) Constructing teacher and their work: A Discourse Analysis of British Columbia's 21st-Centruy Policy Agenda	Cory Steeves	2012	Green
94	Dichotomized Metaphors and Young People's Educational Routes	(Lahelma, 2009)	2009	Green
95	An Ethnographic Investigation of Attitude Development in Vocational Education: The importance of Ethnographic Meaning	(Claus, 1984)	Apr. 1984	Green

96	Using Case Study Analysis in Technology Education Research	(Foster, 2002)	2002	Green
97	The Politics of Research in Technology Education: A Critical Content and Discourse Analysis of the Journal of Technology Education, Volumes 1-8	(Petrina, 1998)	1998	Green
98	At Risk Students and Technology Education	(Cardon, 2000)	2000	Green
99	Choosing Qualitative Research: A Primer for Technology Education Research	(Hoepfl, 1997)	1997	Green
100	Meta-Analysis Research: A Potential Choice for CTE Researchers and Consumers	(Gordon, 2007)	2007	Green
101	A Different Storytelling of Technology Education Curriculum Re-Visions: A Storytelling of Difference	(O'Riley, 1996)	1996	Green
102	Quality and Characteristics of Recent Research in Technology Education	(Johnson & Daugherty, 2008)	2008	Green
103	Project-Based Technology: Instructional Strategy for Developing Technological Literacy	(Frank & Barzilai, 2006)	2006	Green
104	Exploring the Relevance of Qualitative	Claire Major, Maggi Savi-Babed	2010	Green

	Research Synthesis to High Education Research and Practice			

Appendix B: Axial Coding Stage

Axial Coding Frame

1.	**Document Title**		
2.	**Author(s)**		
3.	**Year of Publication**		
4.	**Type of Document**		
5.	**Does the document make statements in reference to any of the topics listed below?** ☐ **Career and Technical Education** ☐ **Technology Education** ☐ **Industrial Arts** ☐ **Vocational Education**	☐ Yes (check all that apply on left) ☐ No (stop) ☐ Can't Tell (stop)	**Location in document**
6.	**Does the document make any statements which function to highlight a difference between academic education and CTE?**	☐ Yes ☐ No ☐ Can't Tell	**Location in document**
7.	**Does the document make any specific recommendations or statements regarding CTE?**	☐ Yes ☐ No ☐ Can't Tell	**Location in document**
8.	**Does the document make any statements related to the transition from high school?** ☐ **to a job/career** ☐ **to college/university**	☐ Yes (go to 9) ☐ No (go to 10) ☐ Can't Tell (go to 10)	**Location in document**
9.	**Does the statement indicate a role for CTE in this transition?**	☐ Yes ☐ No ☐ Can't Tell	**Location in document**
10.	**Does the document make statements that connect marginalized or at risk students and CTE?**	☐ Yes ☐ No ☐ Can't Tell	**Location in document**

11.	**Does the document make statements which function to position academic education as more valuable to a student than CTE?**	☐ Yes ☐ No ☐ Can't Tell	**Location in document**
12.	**Does the document indicate if CTE teachers were involved in writing or developing the document?**	☐ Yes ☐ No ☐ Can't Tell	**Location in document**

Axial Coded Document List

Title	Author/Source	Publication Date	Document Type	Date Range from Open Coding (Yellow)
Articulated Bachelor of Education Human Recourse Development Specialization B.ED (HRD)	(UPEI, Holland College, 2008)	2006	Program Proposal	Trades Strategy
Trades Training for Secondary Schools -- Research and Recommendations	(Trainor, 2005)	2005	Internal Department Paper	Trades Strategy
High Schools In Transition	(Senior High Review Committee, 1994)	1994	Department Recommendations	pre Trades Strategy
Some New Directions Volume2 Recommendations	(Glendenning & Hall, Some new directions volume 2: Recommendations, 1988)	1988	Department Recommendations	pre Trades Strategy
SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS	(PEI Department of Education, 1998)	1998	Program Proposal	pre Trades Strategy
Grey Documents	1989-2008	Pre 2003	Grey Documents	post Trades Strategy

Unit 3 Pilot Project Career Exploration Courses	(Unit 3 Pilot Project, 1989)	1989	Grey Documents	pre Trades Strategy
Unit 2 Vocational Education Committee Recommendations	(Unit 2 Vocational Education Commitee, 1991)	1992	Grey Documents	pre Trades Strategy
Career Exploration Courses	(Bernard, 1992)	1992	program descriptions	pre Trades Strategy
Grey Documents (2003-2007)	1989-2008	2003		Trades Strategy
Evaluation of the New Trades Training Model Implementation at Holland College	(Fogarty & Caiger, 2007)	2007	Program evaluation	Trades Strategy
Intermediate Program of Studies 2012/13	(Department of Education and Early Childhood Development, 2012)	2012	Policy	post Trades Strategy
Senior High Program of Studies 2013/14	(Department of Education and Early Childhood Development, 2013)	2013	Policy	post Trades Strategy
Westisle Composite High School Technical/Trades-Related Program Opportunities	(Millar, 2007)	2007	Program Proposal	Trades Strategy
Prince Edward Island Trades Strategy	(Trades Strategy Committee, 2005)	2005	Policy Document	Trades Strategy
Beyond 2000 A Study of Vocational Education For Prince Edward Island	(Glendenning & Hall, 1988)	1988	White Paper	pre Trades Strategy
Proceedings of the Minister's Summit on Learning	(Department of Education and Early Childhood Development, 2010)	2010	Proceedings	post Trades Strategy

A Reaction to the Report Vocational Education on Prince Edward Island "Some New Directions"	(PEI Teachers Federation, 1989)	1989	Reaction Report	pre Trades Strategy
Excellence in Education: A Challenge for Prince Edward Island	(Kurial, 2005)	2005	Report	Trades Strategy
Response to the PEI Excellence in Education: A Challenge for Prince Edward Island	(PEITF School Counsellors Association, 2005)	2006	Reaction Paper	Trades Strategy
Towards Excellence: Final Report on the Structure and Governance of the PEI Educational System	(Fogarty, Towards excellence, 1993)	1993	Report	Pre-Trades Strategy
Roundtable on Occupational Training Within the Secondary School System	(Scott, 2003)	2003	Roundtable Draft Proposal	Pre-Trades Strategy
Meeting the Needs of Education, Health and Community in Eastern Kings	(Willis & Miles, 2010)	2010	Report	Post-Trades Strategy
Home Economics Program Review	(Home Economics Program Review Committee, 1996)	1996	Report	Pre-Trades Strategy
Transition From School to the Trades	(PEI Apprenticeship Board, 1990)	1990	Report	Pre-Trades Strategy
Restructuring Apprenticeship Training	(MacDonald, 2004)	2004	Concept Paper	Post-Trades Strategy
Path to Success: Testing a New Approach to Apprenticeship	(PEI Apprenticeship Board, 2007)	2007	Report	Trades Strategy

Training				

Appendix C: Selective Coding Stage

Question 5: Selective Coding

Question 5: Does the document make statements in reference to any of the topics listed below? -Career and Technical Education - Technology Education - Industrial Arts - Vocational Education		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
Vocational Education is a pragmatic approach in which new programs and techniques have suggested practices that meet the needs of the workplace and the future.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Vocational Education (also known as industrial arts, technology education, technical training) has traditionally prepared students for paid or unpaid employment and has primarily been delivered in high schools and post-secondary institutions such as community/technical colleges.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Recently, in many areas of Canada, the need for vocational teachers in high schools has dwindled as: enrollment has decreased; many of the certified traditional industrial arts/vocational teachers have reached retirement age; and , reduced emphasis on vocational education has occurred.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
As there is a growing understanding of multiple intelligences and the need to foster skills and talents in our youth, schools are recognizing their industrial arts/vocational programs to include the broader terms: 'technology education' and 'human resource development'.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
The title Career Exploration Courses is used exclusively to describe courses offered in high school that are based on the world of work.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
The title Vocational Education is not used for high school purposes and is left to describe adult training courses at the post-secondary level.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses

All courses will be described as Career Exploration Courses (instead of Vocational) and will include knowledge and skills drawn from specific occupations in the world of work.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
Career Exploration Courses will provide students with an introduction to career clusters, experience, that prepare them for post-secondary education and marketable skills for direct entry into the world of work. However, Career Exploration Courses in high school should not be confused with traditional Vocational Courses which are intended for adults who are seeking intensive trade training at the post-secondary level.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
All Career Exploration Courses will have more than one designation with regard to course number; some examples follow: a course might be assigned one or two of the following 921 -- 931 -- 951 -- 952 or perhaps 7 and/or 8 in place of 9.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
Vocational course offerings developed for high school should have a strong career orientation component as opposed to preparing students for particular jobs.	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
The name "Vocational Program", therefore should be no longer used in reference to high school level courses; in its place the title, Career Exploration Program, should be used	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
The goals and objectives of Career Exploration Courses are based on knowledge and skills drawn from specific occupations in the world of work.	pre Trades Strategy	Career Exploration Courses
The general purpose of each course (CEC) is to provide students with opportunities to explore the world of work and to have students develop introductory skills associated with specific careers.	pre Trades Strategy	Career Exploration Courses
course selection packages -- my note these offer a telling value judgment --	pre Trades Strategy	Career Exploration Courses
The intermediate school and its programs should encourage students to broaden their interests. This is one function of the course in art, music, industrial technology, a second language, and of the broadened nature of many other courses.	post Trades Strategy	Intermediate Program of Studies
As the Western School Board looks into the future and the renewed interest in trades and technical related careers, Westisle Composite High School is interested in pursuing programs that may be of more personal interest and better prepare students for the world of work and/or post-secondary studies.	Trades Strategy	Westisle Composite High School Technical/Trades-Related Program Opportunities

Pathways have been developed to meet the needs of five distinct types of learners. The learners and their specific pathways are described below. • Pathway 1: Youth in the secondary school system will participate in applied trade career exploration programs and core experience opportunities that will prepare them for entry into occupationally specific post-secondary trades training.	Trades Strategy	Prince Edward Island Trades Strategy
Vocational high school programs on Prince Edward Island are of relatively recent origin (since the early 1960's) and initially were shaped by federal criteria.	pre Trades Strategy	Some New Directions Volume2 Recommendations

Question 6: Selective Coding

Question 6: Does the document make any statements which function to highlight a difference between academic education and CTE?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
Historical Background Teacher Education on Prince Edward Island has long been served by two institutions, each with a different energy and focus. The Faculty of Education at the University of Prince Edward Island has provided teachers with the training to teach academic subjects in the public school system. The local community college, Holland College, has provided teacher education for vocational and occupational teachers in Prince Edward Island working at both the college and public school levels.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
The Prince Edward Island Department of Education certifies all teachers and grants licenses for the graduates of both Holland College and UPEI. Vocational teachers are given additional credits for their work experiences prior to entering the teaching profession, so their remuneration scales differ from those for academic teachers.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
As noted previously (pg4), PEI and other provincial departments of education are recognizing the varied needs of our youth in the public school system, and it is necessary to develop a cadre of well-trained teachers with expertise in both academic and technical areas to work with these students.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
In Stage one, candidates will complete a Certificate in Adult Education which will be jointly offered by UPEI and Holland College. It will be taught at Holland College by professors and instructors approved by UPEI. Upon completion of the CAE, participants also receive a Vocational Teacher's license (PEI Department of Education)	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
In Stage Four, students who have the required five years of school and work-related experience who aspire to teach in the public school system and have completed the first three stages of the programme, will be required to take education courses which directly relate to an academic teachable subject and to the art of teaching.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)

Currently, upon completion of the Certificate in Adult Education, technological teachers are granted a Vocational Teacher's License which enables them to teach in this field. Many of these practicing technological teachers are seeking further education and a degree programme that will enable them to develop, refine and upgrade their specialized training, and, will provide them with the knowledge required to teach in an academic discipline within the school.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
As the Faculty of Education and the school system require that middle and senior high teachers be able to teach in two different teachable areas, students choosing to use their vocational/occupational background to teach in the public school system, should pursue an academic minor in a teachable subject area.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Specialized programs in teacher education for technological teachers have not existed in Atlantic Canada since the Nova Scotia Teachers College closed. (1997)	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
For those individuals who choose to teach in the public school system, their knowledge in occupational areas and a necessary second teachable subject will be an added resource to the community.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Vocational/Industrial Arts/Technology teachers on PEI have requested an opportunity to improve their professional qualifications with courses that are approved by the Department of Education. These people have the qualifications to teach in Senior and Middle year in the public school system and have been certified to teach using the salary scale for Vocational teachers which differs from the Academic scale.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Last but not least, the secondary trades strategy needs a catchy "brand" that must be clearly defined and promoted as a distinct and desirable career pathway.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
There is need to develop a Technology Education 10 course that would appeal to a greater number of students including those students who traditionally ignore this type of course.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations

The hands on component should provide students with the opportunity to experience a broad based set of transferable skills acquired through a project based approach.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
Currently seventy percent of high school students are enrolled in the academic stream, whereas only thirty percent attend post-secondary institutions after graduation. According to the teachers surveyed, this has resulted in a reduction of standards in order to accommodate a wide range in student abilities. A significant number of students enrolled in the academic stream may be better served by participating in a meaningful general or practical stream. For this to happen, attitudes of parents and students about the worthiness of the practical and general streams must change. It is interesting to note that students from any stream find success in "open" course.	pre Trades Strategy	High Schools In Transition
The committee believes that by clearly defining the objectives of each stream, student selection of courses will be more appropriately linked with their career, work and study plans.	pre Trades Strategy	High Schools In Transition
Clearly, a majority are concerned about the purpose of the present general stream and would like to see it become more meaningful rather than a "watered-down" version of the academic stream. One suggestions, with growing support throughout other provinces in Canada, is the redesigning of the general stream into a technical stream where some measure of preparation for the work place or post-secondary training are provide.	pre Trades Strategy	High Schools In Transition
The committee sees an additional need to evaluate the presently approved local programs(primarily CTE programs under other names) to determine their value in the overall senior high curriculum.	pre Trades Strategy	High Schools In Transition
Survey question: The integration of academic and vocational education has the potential of making the experience of applied knowledge more accessible to academic students and at the same time making academic subjects more accessible to students concentrating on vocational education. {Strongly Agree 21%; Agree 60.2%; Disagree 12.7%; Strongly Disagree 1.7%)	pre Trades Strategy	High Schools In Transition
Survey question: The emphasis on vocational education should change from preparation for work to preparation for post-secondary technical education. [Strongly agree 9.9%; Agree 56.4%; Disagree 22.7; Strongly Disagree 2.8%}	pre Trades Strategy	High Schools In Transition

Survey question Upon successful completion of provincial requirements for graduation all students should… …receive a common diploma as is current practice (8.8%) …receive a common diploma with an attached transcript explaining the work covered (12.2%) ...receive a diploma which reflects their concentration of study, e.g., academic, general, or practical (64.1%) receive a diploma reflecting their achievement based on specified competencies (13.3%)	pre Trades Strategy	High Schools In Transition
The focus of vocational education skills training on the psychomotor activities associated with the jobs of the industrial revolution is no longer appropriate. There is a need to expand the vocational curriculum with emphasis on the cognitive and affective aspects of jobs.	pre Trades Strategy	High Schools In Transition
In the Glendenning/Hall Report (1988), it was recommended that all public school teachers (including technology education teachers) come under a single certification scheme. A move in this direction could contribute to the enhancement of the image of vocational education at the high school level.	pre Trades Strategy	High Schools In Transition
Although all educators are caught up in the literature of the education reform movement, for the most part secondary vocational education has been ignored. The reform has been mainly directed at improving education for those who will purse post-secondary education at the university and college level. Thus the emphasis is on education upon which to build more education as opposed to education that has more immediate relevance for youth who will not pursue further education following high school.	pre Trades Strategy	High Schools In Transition
The agreement is made that for many such young people, the approach vocational education offers is a valuable and effective way to acquire the basic skills and general abilities that they will need to be successful in a wide range of endeavors.	pre Trades Strategy	High Schools In Transition
Schools cannot expect 100 percent of its young people to be able to complete twelve years of a rigorous academic program in traditional classroom settings.	pre Trades Strategy	High Schools In Transition
The title Vocational Education is not used for high school purposes and is left to describe adult training courses at the post-secondary level.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
All courses will be described as Career Exploration Courses (instead of Vocational) and will include knowledge and skills drawn from specific occupations in the world of work.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
The student clientele will likely be drawn from the following groups (as they are currently known): Pre-Vocational Candidates; Integration Candidates; Industrial Arts Candidates; Potential Drop-outs; Special Education	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses

Students; and Students seeking interest courses.		
None of the titles listed above will be used to describe students or courses; all courses will be classified as Career Exploration Courses open to all students.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
All Career Exploration Courses will have more than one designation with regard to course number; some examples follow: a course might be assigned one or two of the following 921 -- 931 -- 951 -- 952 or perhaps 7 and/or 8 in place of 9.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
It is likely that the courses that have a star (*) beside their titles will have, at the very least, the designation __2 such as in 952. This would allow students with a strong interest in these courses to experience sustained manual activity in the shop using a double period.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
The name "Vocational Program", therefore should be no longer used in reference to high school level courses; in its place the title, Career Exploration Program, should be used	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
Each course in the Program should be composed of a "core" curriculum suitable for an open level credit but having an enrichment component for those students who wish to challenge for an academic credit.	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
The goals and objectives of Career Exploration Courses are based on knowledge and skills drawn from specific occupations in the world of work.	pre Trades Strategy	Career Exploration Courses
In general, students who intend to study at university should obtain a minimum of 65% in five grade 12 academic subjects (including English and Math). However, it is recommended that such students attempt 6 academic courses in both grades 11 and 12.	pre Trades Strategy	Career Exploration Courses
course selection packages -- my note these offer a telling value judgment --	pre Trades Strategy	Career Exploration Courses
Math requirements were felt to be an unrealistic barrier for many students who had an interest and skill in the trades.	Trades Strategy	Grey Documents (2003-2007)
The intermediate school and its programs should encourage students to broaden their interests. This is one function of the course in art, music, industrial technology, a second language, and of the broadened nature of many other courses.	post Trades Strategy	Intermediate Program of Studies
Exploratory programs identified***my note	post Trades Strategy	Intermediate Program of Studies
Despite having a long history of apprenticeship, England appears to be somewhat similar to Canada in overcoming image problems associated with the trades. Part of this	Trades Strategy	Prince Edward Island Trades Strategy

problem is that, on occasion, trades have been used as educational dumping grounds for problem students.		
Skills have to be contextualized. That is, the connection between work and basic skills (including communications and math) has to be evident.	Trades Strategy	Prince Edward Island Trades Strategy
A shortage of effective high school trades work-experience and industrial arts programs … represent significant educational barriers to apprenticeship.	Trades Strategy	Prince Edward Island Trades Strategy
View the table on page C.8 and C9 for details and comparisons	Trades Strategy	Prince Edward Island Trades Strategy
Perceptions of the trades vary across different segments of the population and in different geographic regions. Perceptions also vary in accordance with the information made available to, and the awareness of, the individual. Some commonly held perceptions are listed below.	Trades Strategy	Prince Edward Island Trades Strategy
Essential skills are the foundational skills that underpin the higher order functioning of a worker. Literacy, numeracy, oral communications and the ability to work with others would all be considered to be essential skills. Complete proficiency in essential skills is prerequisite for the development of more applied and higher order work functions. Issues concerning essential skills include:	Trades Strategy	Prince Edward Island Trades Strategy
Learning plans that are continually monitored and updated will identify not only technical skills development but also academic knowledge and requirements.	Trades Strategy	Prince Edward Island Trades Strategy
To target youth, it is recommended that the Department of Education provide a comprehensive career strategy to the school system to encourage all students to consider trades. Any 16-year-old student currently registered in high school is eligible to register in ASAP.	Trades Strategy	Prince Edward Island Trades Strategy
Frank mentioned it appeared that the increase in applications was certainly influenced by the growing trend for high schools students to continue their education by attending university or college.	Trades Strategy	Prince Edward Island Trades Strategy
Rod highlighted the handout on the German educational system. Students are "streamed" into academic and vocational paths in the fifth and sixth grades. Jeanette questioned if we should be looking at a country that streams their students in Grade 6. How much would be adaptable here in a totally different culture? Brian feels it is helpful to know what is happening internationally.	Trades Strategy	Prince Edward Island Trades Strategy
It was noted that some Island politicians are of the mindset that the old PVI system was a perfect model for trades training. Jeanette feels that we must ensure the needs of industry are met by producing a highly trained, skilled workforce.	Trades Strategy	Prince Edward Island Trades Strategy

Craig feels # 1 (Entrance Requirement to HC Programs) should be separated from low literacy/numeracy skills.	Trades Strategy	Prince Edward Island Trades Strategy
Discussion was held regarding employers comments on the Provincial Vocational Institute (PVI) system. Aileen noted that employers felt career exploration was one of strongest aspects of that system. Tawna noted that the employers felt the PVI system allowed trainers and employers to determine aptitude for specific trades. Employers felt graduates of PVI training were better employees.	Trades Strategy	Prince Edward Island Trades Strategy
Craig asked if it would be beneficial to add a new section to the current apprenticeship log book to document the skills secondary students learn. Jenna noted that she has discussed the possibility of adding a column in the log book with the Youth Apprenticeship coordinator. Some discussion was held regarding whether choosing this route at the high school level would act as a barrier to university entrance. Barbara noted that the student would still be eligible for university as long as credit requirements are met.	Trades Strategy	Prince Edward Island Trades Strategy
When PVI opened, students in grade nine had the option of attending PVI for a year of vocational exploration before making their choice of which trade to pursue in grades 10 through to 12. All students at PVI continued their academic studies for half of each day while learning a trade during the other half of the day. Students graduated with a high school certificate and a trades certificate.	Trades Strategy	Prince Edward Island Trades Strategy
In the early 1970s, the PVI system was modified and became the "Post-10" system. Students took trades orientation in grade nine to explore a variety of trades. In grade 10, they would select one trade and begin training on a half-time basis. Upon completing grade 10, students took one full year of trades training and graduated with their trades certificate. Whereas they did not take any academic studies after grade 10, they did not receive a high school certificate. This system worked well in terms of providing students with trades skills but fell short in that it left them without any high school credential. The system only ran for a few years.	Trades Strategy	Prince Edward Island Trades Strategy
The last paragraph in B.1.1 is interesting to note as well	Trades Strategy	Prince Edward Island Trades Strategy
In addition, the Report recommends that a course called Introduction to Technology be required for all students.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Additional recommendations including the establishment of a provincial Vocational High School Co-ordinating Committee, a model for program planning and approval, strengthened guidance for students who are not university	pre Trades Strategy	Some New Directions Volume2 Recommendations

bound.		
Historically vocational education has not been viewed as a part of general education. This may have contributed to the perceived second-class status of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
Access to vocational education electives is being restricted by an increase in the academic credits required for graduation from secondary school	pre Trades Strategy	Some New Directions Volume2 Recommendations
Philosophy of Vocational Education Secondary education is intended to serve the needs of all school age youth. In addition to being useful in its own right, it should also prepare people for the next level of education or to enter wage earning employment. The latter receives scant, but deserves more, attention in most schools.	pre Trades Strategy	Some New Directions Volume2 Recommendations
There should not be any debate about general versus vocational education. Students need both. As to whether schools should prepare people for jobs, the answer is yes.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The traditional view of education is content-oriented, that is, it revolves around the study of history, literature, engineering, secretarial, etc. But content can no longer be used to determine which courses are vocational. A broader definition is required for the year 2000.	pre Trades Strategy	Some New Directions Volume2 Recommendations
During the course of its investigation, the Study Team encountered the matter of the poor image of vocational education. 1) Vocational education is associated with heavy and dirty work 2)It is defined narrowly to include primarily traditional trades and apprenticeships 3) The label has been used to denote a level of courses rather than a focus. 4) Vocational courses are usually shorter and not taken at university 5) Vocational courses in the secondary school frequently are not accepted as entrance requirements for university. 6)There is an overwhelming focus in secondary schools on the needs of one group of students - those who are university bound 7) People who plan and manage education do not see the value of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
The secondary schools should provide a comprehensive and integrated system of course offerings. By comprehensive is meant a school which offers both academic and vocational courses under "one roof"	pre Trades Strategy	Some New Directions Volume2 Recommendations

This arrangement reflects the reality of the larger community and allows students with varying interests and abilities to learn and grow together. Furthermore, such an integrated system provides students with an opportunity to sample from a broader offering of courses than would be possible in a specialized school.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational courses, per se, should not be locked into a single level or classification. In concert with the notion of an integrated curriculum, vocational education courses should reflect levels of difficulty that parallel those of academic courses.	pre Trades Strategy	Some New Directions Volume2 Recommendations
In Fact, the term vocational as applied to secondary school courses may no longer be appropriate. Some courses should be acceptable for university or college entrance; other may lead into advanced standing in a trade or occupation. The content and thrust of each course needs to be considered and a level assigned.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The entirely laudable aim of raising standards of education by increasing the graduation requirements has had the unfortunate effect of depriving many people of the opportunity to enroll in vocational courses.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Graduation requirements should be such that students will have access to a range of vocational education courses. Furthermore, the graduation requirements should be sufficiently flexible to allow students to select a series of vocational courses from a cluster or a field.	pre Trades Strategy	Some New Directions Volume2 Recommendations
University entrance requirements should not dictate graduation requirements for all students particularly those who pursue an apprenticeship or post-secondary training.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The Study Team believes that the term Vocational should be removed as a designation for courses and that courses simply be referred to by course names: welding, accounting retail sales, etc.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The time allocation and credit value of each course must be determined. The vocational high school courses should be designed in such a way that they may be easily integrated into the overall high school curriculum. To this end, they should be contained in at least three or four levels of difficulty to correspond with levels in other parts of the curriculum	pre Trades Strategy	Some New Directions Volume2 Recommendations
Present graduation requirements ten to discourage academic students from taking a vocational course as part of their high school program. Comment Teacher/Administrator	pre Trades Strategy	Some New Directions Volume2 Recommendations
List of trends that reflect the direction of secondary vocational education in other jurisdictions (list in report)	pre Trades Strategy	Some New Directions Volume2 Recommendations

In view of the fact that the high school curriculum has a limited capacity for expansion, "Introduction to Technology", might be included as part of a revised Grade 10 science program, or even part of an Industrial Arts program.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Our society has evolved from the industrial age where value was added to natural resources through mechanical and physical processes to the knowledge age where value is added to information to create knowledge and expertise.	post Trades Strategy	Proceedings of the Minister's Summit on Learning
Image on page 8 of report	post Trades Strategy	Proceedings of the Minister's Summit on Learning
The demands for analytical work (engineers) and interactive work (consultants) is accelerating, while the demand for skills in manual and routine work (such as manufacturing, and primary services) is for the most part decelerating, or leveling off at best. Island students of today need to be ready for the analytical and interactive world of tomorrow.	post Trades Strategy	Proceedings of the Minister's Summit on Learning
Used in concert with other teaching models, project-centered learning can be an example of this balance through a learning experience that not only provides hands-on, real-world opportunities to lean content, delves deeply into a topic of great interest to students, but that also teaches key collaborative and other 21st Century skills necessary for the knowledge and innovation economies.	post Trades Strategy	Proceedings of the Minister's Summit on Learning
The traditional education has focused on 'academic' students, or those who do well in lecture-based formats	post Trades Strategy	Proceedings of the Minister's Summit on Learning
Assessment and evaluation of learning is not only driven by teachers, students, and parents, it is also driven by post-secondary institutions that use grades and marks as a means for determining eligibility for courses, programs, and also for determining the apportion scholarship and bursary support.	post Trades Strategy	Proceedings of the Minister's Summit on Learning
4.4 Urban/Rural Divide: It was noted that often curriculum and school programming, in both rural and urban areas, emphasized the utility of education within a university context, whereas in rural communities it was felt that greater emphasis might be placed on the utility of education within a college or trade school context, in order to be more practical and realistic.	Trades Strategy	Task Force

Question 7: Selective Coding

Question 7: Does the document make any specific recommendations or statements regarding CTE?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
Last but not least, the secondary trades strategy needs a catchy "brand" that must be clearly defined and promoted as a distinct and desirable career pathway.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
There is need to develop a Technology Education 10 course that would appeal to a greater number of students including those students who traditionally ignore this type of course.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
The committee believes that by clearly defining the objectives of each stream, student selection of courses will be more appropriately linked with their career, work and study plans.	pre Trades Strategy	High Schools In Transition
Clearly, a majority are concerned about the purpose of the present general stream and would like to see it become more meaningful rather than a "watered-down" version of the academic stream. One suggestions, with growing support throughout other provinces in Canada, is the redesigning of the general stream into a technical stream where some measure of preparation for the work place or post secondary training are provide.	pre Trades Strategy	High Schools In Transition
The committee sees an additional need to evaluate the presently approved local programs(primarily CTE programs under other names) to determine their value in the overall senior high curriculum.	pre Trades Strategy	High Schools In Transition
Survey question: The emphasis on vocational education should change from preparation for work to preparation for post-secondary technical education. [Strongly agree 9.9%; Agree 56.4%; Disagree 22.7; Strongly Disagree 2.8%}	pre Trades Strategy	High Schools In Transition
The focus of vocational education skills training on the psychomotor activities associated with the jobs of the industrial revolution is no longer appropriate. There is a need to expand the vocational curriculum with emphasis on the cognitive and affective aspects of jobs.	pre Trades Strategy	High Schools In Transition

The term "vocational' conveys a traditional image of a narrow range of occupations limited to the trades and industrial sectors.	pre Trades Strategy	High Schools In Transition
Recommendation 43 That the term "vocational education" be abandoned and that "career and technology education" (CTE) become the umbrella term to identify the field of studies which would encompass industrial, information and business technologies.	pre Trades Strategy	High Schools In Transition
"Vocational Education" has lacked coherence across the province, and as a result there are significant variations.	pre Trades Strategy	High Schools In Transition
Recommendation 44 That the Department of Education provide a framework for CTE in senior high schools through the articulation of a policy statement with guiding principles.	pre Trades Strategy	High Schools In Transition
Senior high school vocational education on Prince Edward Island can best be described as eclectic. The trades and industrial programs evolved as new facilities became available. Each school unit has developed its own program in the absence of provincial direction. Hence there is a wide variation of offerings and therefore a need for provincial co-ordination	pre Trades Strategy	High Schools In Transition
In the Glendenning/Hall Report (1988), it was recommended that all public school teachers (including technology education teachers) come under a single certification scheme. A move in this direction could contribute to the enhancement of the image of vocational education at the high school level.	pre Trades Strategy	High Schools In Transition
Recommendation 47 That CTE electives be available to all students and that the high school credit system and schedule be sufficiently flexible for students to select them.	pre Trades Strategy	High Schools In Transition
In the past specific career training courses were available at the high school level throughout the province. These courses led either to apprenticeships or direct employment. In the 1980's “project integration” was introduced whereby students spent a half day at their high schools and a half day at a Holland College Centre for career preparatory/vocational training. This program was by and large phased out by Holland College by the mid 1990's.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS

Both provincially and nationally, training programs in high school were replaced by Career Exploration Courses (C.E.C.). In Prince Edward Island many of these courses were developed at the school level as local pilots in order to fill the needs left with the end of Project Integration. Initially, many of the students enrolled in C.E.C. courses were also enrolled in general or practical level core courses. Many of these courses were and are in dire need of being updated and made more relevant to student needs, the modern labor market and societal demands.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
There are also many positives in place in our schools for non-university bound students at the present time. Schools have taken many initiatives to develop C.E.C. offerings, adopt work experience programs, promote entrepreneurship, and provide technology related opportunities for students	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
At the grade 11-12 levels it is important that we retain and build on present Vocational Training, Work Experience and CEC offerings. There is a need to provide schools with frameworks and models on which to structure their CTS modules and courses taking into account available school and community facilities. Work experience, job shadowing, apprenticeships and work study programs should also be supported and expanded. Career modules should also be organized into strands with introductory, intermediate and advanced levels of difficulty.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
Recommendation 14 - A consultant be employed and given the responsibility to coordinate and review existing offerings and spearhead the development of new Apprenticeship, C.E.C., and C.T.S. offerings as well as review and develop guidelines and supports for all work related programs. This consultant will work closely with the schools and for the first three years will be assigned solely to senior high schools.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
Concern was expressed that there needs to be a vision or philosophy for Technology Education in order for curriculums to be developed and supported.	post Trades Strategy	Grey Documents
The unit 3 Pilot Project is supported by the following specific recommendations in the Hall/Glendenning Report: #4, #7, #8	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
All courses will be described as Career Exploration Courses (instead of Vocational) and will include knowledge and skills drawn from specific occupations in the world of work.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
All Career Exploration Courses will have more than one designation with regard to course number; some examples follow: a course might be assigned one or two of the following 921 -- 931 -- 951 -- 952 or perhaps 7 and/or 8 in	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses

place of 9.		
The name "Vocational Program", therefore should be no longer used in reference to high school level courses; in its place the title, Career Exploration Program, should be used	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
The goals and objectives of Career Exploration Courses are based on knowledge and skills drawn from specific occupations in the world of work.	pre Trades Strategy	Career Exploration Courses
all teachers felt strongly that this basic training can be done in high schools and should be made available to all students.	Trades Strategy	Grey Documents (2003-2007)
Identify transitional pathways to Holland College for students who have completed the high school trades training model.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College develop the articulation standards for recognizing the learning of students completing the new high school trades programs. This would include, but is not limited to curriculum, assessments, equipment, instructor qualifications, and essential skills.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College refocus their participation in the 'trades steering committee' involving the Department of Education and Regional School Boards representatives in order to effectively address the formative issues pertinent to the development of high school to college transition arrangements.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College provide applicants who have high school trades credits with preferred standing for admission purposes.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College initiate activities that develop the working relationships between the secondary and post secondary providers of trades training including but not limited to: teacher exchanges, student meetings, field trips, March break workshops, and Skills Canada activities.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The intermediate school and its programs should encourage students to broaden their interests. This is one function of the course in art, music, industrial technology, a second language, and of the broadened nature of many other courses.	post Trades Strategy	Intermediate Program of Studies
The Board supports the recommendation of the Task Force on Education (2006) in seeking to expand the trades-related or technical programs as a means of enhancing the learning opportunities available to youth.	Trades Strategy	Westisle Composite High School Technical/Trades-Related Program Opportunities

The new Trades Training Framework has been designed to be a unified, coordinated, learner based educational continuum. It is based on four principles as summarized below. The Framework shall • be responsive to the needs of industry and flexible in meeting those needs; • be inclusive of all potential learners; • recognize and value human capital, and; • optimize the use of existing resources.	Trades Strategy	Prince Edward Island Trades Strategy
Pathways have been developed to meet the needs of five distinct types of learners. The learners and their specific pathways are described below. • Pathway 1: Youth in the secondary school system will participate in applied trade career exploration programs and core experience opportunities that will prepare them for entry into occupationally specific post-secondary trades training.	Trades Strategy	Prince Edward Island Trades Strategy
The development of a new integrated Trades Strategy for P.E.I. is an exciting and progressive venture. The Strategy creates a supportive and seamless learning environment for high school youth and adults that clarifies the roles and responsibilities of the many players and engages industry as pivotal to the training system. Clearly, the most significant impact of implementing the Strategy will be an increase in the number of people entering trades training and achieving Red Seal certification. High school and college entrants will be on a track to achieve Red Seal certification	Trades Strategy	Prince Edward Island Trades Strategy
The new coordinated training framework is designed to improve the skill level of tradespersons and to address the supply of tradespersons in response to labour market demand. Incorporated in the framework is provision for the exploration of trades' careers in high school, the integration of continuous educational pathways leading to the completion of apprenticeship and Red Seal certification, and significantly strengthened involvement with industry participants.	Trades Strategy	Prince Edward Island Trades Strategy
The development of an integrated curriculum and common standards between the College and the high schools for the two trades mentioned above will also begin in September 2005. Activities will include the evaluation of facilities and equipment in public schools and the development of introductory technology and trades cluster courses.	Trades Strategy	Prince Edward Island Trades Strategy
An emphasis will be placed on programs in career and self-exploration that will be offered at the secondary school and post- secondary levels.	Trades Strategy	Prince Edward Island Trades Strategy
The scope of career and self- exploration programs will vary in accordance with specific objectives but may encompass opportunities for students to: • identify general and particular areas of interest and ability; • develop representative and/or basic skills in one or several trades areas; • gain basic knowledge (salary ranges, scope of work, working conditions, etc.) of specific trades; • participate in essential skills training; • investigate	Trades Strategy	Prince Edward Island Trades Strategy

educational and career paths in the trades.		
Rationale Career and self-exploration programs serve an important role in helping to improve the rate of retention of students in trades training. Specifically, these programs allow participants to • become more focused on their future career aspirations; • become better educated as to their abilities; • make better training choices.	Trades Strategy	Prince Edward Island Trades Strategy
Issues Addressed • Insufficient importance is placed on career exploration in the K- 12 system. • Career exploration is essential so that students do not enter a trade without knowing what is involved in an occupation. • Lack of early exposure to trades may lessen industry retention	Trades Strategy	Prince Edward Island Trades Strategy
It is recommended that the primary roles of the secondary school system related to trades training should include: 3.1.1 Transition programming (secondary to post secondary, secondary to workplace training); 3.1.2 Integrated curricula for developing foundational trade skills; 3.1.3 Youth apprenticeship training (integration between Apprenticeship and Secondary School)	Trades Strategy	Prince Edward Island Trades Strategy
developing foundational trade skills The integrated curricula will include options for: • General or core technical skills development across all trades • Technical skills development across a family of occupations (i.e., motive power or wood). • Core experience through Apprenticeship Core Occupational Courses or extended project or personal challenge opportunities.	Trades Strategy	Prince Edward Island Trades Strategy
It is recommended that the secondary school system reduce the emphasis on developing job specific skills to first providing core skills across a majority of trades and the optional provision of skills related to an occupational field (i.e. motive power, metal trades). The specification would be to a cluster of occupations rather than to specific occupations. Increased specificity could be supported through extended project or personal challenge opportunities. These extended projects or personal challenge opportunities would enrich learning by encouraging students to pursue in depth study in an area that interests and motivates them.	Trades Strategy	Prince Edward Island Trades Strategy
These courses could be defined as pre-apprenticeship training where they are truly "before apprenticeship." They serve to provide students with the foundational skills necessary for success in apprenticeship training. The occupational skills gained in pre- apprenticeship training must be directly transferable to the apprenticeship system. It is important that articulation is in place for these	Trades Strategy	Prince Edward Island Trades Strategy

foundational courses to ensure a seamless transition to apprenticeship for students following this path.		
Rather than offering "pre-apprenticeship training programs" in the existing format, a partnership should be formed with the Apprenticeship Section, Holland College and employers to support a Youth Apprenticeship Program. Currently the Accelerated Youth Apprenticeship Program (ASAP) is separate from the public school system as it is administered and delivered through the Apprenticeship Section and employers. The revised youth apprenticeship system includes credit for high school completion and credit to the trade.	Trades Strategy	Prince Edward Island Trades Strategy
Functioning within a new and more integrated Trades Training Framework, the College would be expected to assume the roles articulated below. 3.2.1 Provide support to the elementary and secondary school system Supporting the school system in their provision of exploratory trades training is integral to the long-term success of the Framework. The first and most natural entry point into a career in the trades is through the school system; hence, it is critical that a seamless and logical transition occur from the school system into more advanced training situations.	Trades Strategy	Prince Edward Island Trades Strategy
Pathway 1 is directed toward youth in secondary school. Youth will have the opportunity to partake of applied trade and career exploration programming. Most of this programming will occur in the high schools, although some may also occur within industry or at Holland College pending the facility requirements. This pathway will also incorporate the existing Accelerated Secondary Apprenticeship Program into the secondary school trades curriculum allowing student apprentices to gain high school credits for their experience.	Trades Strategy	Prince Edward Island Trades Strategy
To improve the effectiveness of the youth apprenticeship program in Prince Edward Island, changes to the existing program are recommended. As an integral component of an integrated training continuum, an enhanced program will provide a comprehensible career pathway for Island youth who are interested in the trades	Trades Strategy	Prince Edward Island Trades Strategy
The existing Accelerated Secondary Apprenticeship Program (ASAP) will be integrated into the secondary school system with course offerings made available in every high school and to every student who elects to explore the trades as a career choice.	Trades Strategy	Prince Edward Island Trades Strategy

An Introductory Industrial Technology course will be developed for the express purpose of career exploration. The initial training objective is to provide students with the opportunity to explore technology and trades careers, develop foundational skills, and become aware of their own interests and aptitudes.	Trades Strategy	Prince Edward Island Trades Strategy
Students in grade 11 and 12 will have the opportunity to elect to continue an educational pathway to more in-depth career exploration and skills development in an industry sector or trade "family".	Trades Strategy	Prince Edward Island Trades Strategy
For those students who are able to narrow down their career path, a required Apprenticeship Core Occupation course will allow youth apprentices to focus on their chosen trade. The curriculum for these occupations will be developed to meet industry standards. For students enrolled in these trades specific courses, it is expected that their summer employment is congruent with their career path as outlined in their learning plan. Upon graduation from high school, the apprentice will either continue their training at Holland College or another educational institution, or go directly into industry.	Trades Strategy	Prince Edward Island Trades Strategy
The youth apprenticeship pathway will permit students to gain credit toward high school completion and credit toward an apprenticeship program.	Trades Strategy	Prince Edward Island Trades Strategy
To target youth, it is recommended that the Department of Education provide a comprehensive career strategy to the school system to encourage all students to consider trades. Any 16-year-old student currently registered in high school is eligible to register in ASAP.	Trades Strategy	Prince Edward Island Trades Strategy
It was agreed that a working group would be formed with participants from the high school level to determine what information we require from the high schools. Craig and Barbara will work with Jenna to determine a Terms of Reference for this working group.	Trades Strategy	Prince Edward Island Trades Strategy
The Report recommends that vocational education at the secondary level be continued, and all students be encouraged to elect some courses.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Such courses will be for the purpose of exploring a field rather than for the development of specialized pre-employment skills. The latter will be provided largely through Holland College.	pre Trades Strategy	Some New Directions Volume2 Recommendations
In addition, the Report recommends that a course called Introduction to Technology be required for all students.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational education for secondary school students will now become the sole responsibility of the School Units and be delivered as part of their comprehensive course offerings.	pre Trades Strategy	Some New Directions Volume2 Recommendations

Additional recommendations including the establishment of a provincial Vocational High School Co-ordinating Committee, a model for program planning and approval, strengthened guidance for students who are not university bound.	pre Trades Strategy	Some New Directions Volume2 Recommendations
There should not be any debate about general versus vocational education. Students need both. As to whether schools should prepare people for jobs, the answer is yes.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Recommendation #1 That the Department of Education enunciate a philosophy for vocational high school education and set out a series of policy statements to guide its development and delivery	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational courses at the secondary school should be primarily, but not exclusively exploratory in nature. While there is no consensus as to the degree of specificity of vocational courses, there is a trend in Canadian secondary schools away from job specific skills and towards providing introductory course in an occupational field or cluster.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The Study Team believes that the term Vocational should be removed as a designation for courses and that courses simply be referred to by course names: welding, accounting retail sales, etc.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The Report recommends the establishment of a Provincial Vocational High School Planning Committee for the purpose of coordinating the planning and development of courses for the comprehensive secondary school.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The time allocation and credit value of each course must be determined. The vocational high school courses should be designed in such a way that they may be easily integrated into the overall high school curriculum. To this end, they should be contained in at least three or four levels of difficulty to correspond with levels in other parts of the curriculum	pre Trades Strategy	Some New Directions Volume2 Recommendations
Planning Model for Secondary Vocational Programs (chart in Report)	pre Trades Strategy	Some New Directions Volume2 Recommendations
Recommendation #4 That the comprehensive high school model be extended across the province.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational courses should be organized into three broad clusters: (a) Technology (b) Business ©Applied Arts	pre Trades Strategy	Some New Directions Volume2 Recommendations
Where feasible, some courses may be offered at more than one level of difficulty which parallel other courses in the curriculum. Such levels might include practical, general,	pre Trades Strategy	Some New Directions Volume2

regular (academic), and advanced)		Recommendations
Recommendation #6 That a compulsory course entitled "Introduction to Technology" be offered as either a full credit or half credit to all Grade 10 students.	pre Trades Strategy	Some New Directions Volume2 Recommendations
In view of the fact that the high school curriculum has a limited capacity for expansion, "Introduction to Technology", might be included as part of a revised Grade 10 science program, or even part of an Industrial Arts program.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The content of this course might include such topics as computer applications, data communications, computer interfacing, high tech living, business systems and solutions, and other explorations in electronics and information technology. IN any case, it should include a significant component on hands on experience.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Recommendation #7 That the responsibility for the management and delivery of vocational high school programs be assigned to the Regional School Units.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational education is designed to teach people the fundamentals of particular skills and to train them in new skills.	pre Trades Strategy	Beyond 2000 A Study of Vocational Education For Prince Edward Island
Recommendation 5: The Department of Education accredit programs, including for example, trades experience or Royal Conservatory of Music Programs, taken by students outside of the existing School System	Trades Strategy	Task Force Doc.
Recommendation 15: The general stream of courses in senior high be refined and upgraded, especially in math and numeracy, in order to better prepare students for college, the trades, or the workforce	Trades Strategy	Task Force Doc.

Question 8: Selective Coding

Question 8: Does the document make any statements related to the transition from high school?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
One of the over riding features that was evident in researching other jurisdictions was the strong partnerships formed with industry, post secondary training institutions, and apprenticeship agencies in designing and implementing successful industry related training.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
The career exploration component should enable students to explore their own career interests and aptitudes as they relate to opportunities in trades and technology.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
The committee believes that by clearly defining the objectives of each stream, student selection of courses will be more appropriately linked with their career, work and study plans.	pre Trades Strategy	High Schools In Transition
Clearly, a majority are concerned about the purpose of the present general stream and would like to see it become more meaningful rather than a "watered-down" version of the academic stream. One suggestions, with growing support throughout other provinces in Canada, is the redesigning of the general stream into a technical stream where some measure of preparation for the work place or post secondary training are provide.	pre Trades Strategy	High Schools In Transition
The term "vocational' conveys a traditional image of a narrow range of occupations limited to the trades and industrial sectors.	pre Trades Strategy	High Schools In Transition
Although all educators are caught up in the literature of the education reform movement, for the most part secondary vocational education has been ignored. The reform has been mainly directed at improving education for those who will purse post secondary education at the university and college level. Thus the emphasis is on education upon which to build more education as opposed to education that has more immediate relevance for youth who will not pursue further education following high school.	pre Trades Strategy	High Schools In Transition
The agreement is made that for many such young people, the approach vocational education offers is a valuable and effective way to acquire the basic skills and general abilities that they will need to be successful in a wide range of endeavors.	pre Trades Strategy	High Schools In Transition

In the past specific career training courses were available at the high school level throughout the province. These courses led either to apprenticeships or direct employment. In the 1980's "project integration" was introduced whereby students spent a half day at their high schools and a half day at a Holland College Centre for career preparatory/vocational training. This program was by and large phased out by Holland College by the mid 1990's.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
Both provincially and nationally, training programs in high school were replaced by Career Exploration Courses (C.E.C.). In Prince Edward Island many of these courses were developed at the school level as local pilots in order to fill the needs left with the end of Project Integration. Initially, many of the students enrolled in C.E.C. courses were also enrolled in general or practical level core courses. Many of these courses were and are in dire need of being updated and made more relevant to student needs, the modern labor market and societal demands.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
Career Exploration Courses will provide students with an introduction to career clusters, experience, that prepare them for post-secondary education and marketable skills for direct entry into the world of work. However, Career Exploration Courses in high school should not be confused with traditional Vocational Courses which are intended for adults who are seeking intensive trade training at the post secondary level.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
Vocational course offerings developed for high school should have a strong career orientation component as opposed to preparing students for particular jobs.	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
The general purpose of each course (CEC) is to provide students with opportunities to explore the world of work and to have students develop introductory skills associated with specific careers.	pre Trades Strategy	Career Exploration Courses
A smooth transition from high school to Holland College would require, for the most part, a standardized curriculum and cognitive assessments as well as adequate facilities/equipment/tools.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College develop the articulation standards for recognizing the learning of students completing the new high school trades programs. This would include, but is not limited to curriculum, assessments, equipment, instructor qualifications, and essential skills.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College refocus their participation in the 'trades steering committee' involving the Department of Education and Regional School Boards representatives in order to effectively address the formative issues pertinent to the	Trades Strategy	Evaluation of the New Trades Training Model Implementation at

development of high school to college transition arrangements.		Holland College
The College provide applicants who have high school trades credits with preferred standing for admission purposes.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
The College initiate activities that develop the working relationships between the secondary and post-secondary providers of trades training including but not limited to: teacher exchanges, student meetings, field trips, March break workshops, and Skills Canada activities.	Trades Strategy	Evaluation of the New Trades Training Model Implementation at Holland College
As the Western School Board looks into the future and the renewed interest in trades and technical related careers, Westisle Composite High School is interested in pursuing programs that may be of more personal interest and better prepare students for the world of work and/or post-secondary studies.	Trades Strategy	Westisle Composite High School Technical/Trades-Related Program Opportunities
Pathways have been developed to meet the needs of five distinct types of learners. The learners and their specific pathways are described below. • Pathway 1: Youth in the secondary school system will participate in applied trade career exploration programs and core experience opportunities that will prepare them for entry into occupationally specific post-secondary trades training.	Trades Strategy	Prince Edward Island Trades Strategy
The development of an integrated curriculum and common standards between the College and the high schools for the two trades mentioned above will also begin in September 2005. Activities will include the evaluation of facilities and equipment in public schools and the development of introductory technology and trades cluster courses.	Trades Strategy	Prince Edward Island Trades Strategy
Focus group participants felt that young people were not provided with adequate information … at the high school level and that this has had a negative impact on trades recruitment and training.	Trades Strategy	Prince Edward Island Trades Strategy
The schools are lacking labour market information. This is preventing top students from entering the construction industry.	Trades Strategy	Prince Edward Island Trades Strategy
Trades have to be promoted to youth as a viable career option.	Trades Strategy	Prince Edward Island Trades Strategy
Proper information isn't being distributed in the high schools to ensure students can make informed decisions about courses and careers.	Trades Strategy	Prince Edward Island Trades Strategy
The image of the construction trades among youth, counselors and parents needs to be improved. Better marketing is required to promote the skilled trades as viable career options.	Trades Strategy	Prince Edward Island Trades Strategy

Career information is lacking in many occupational areas, and a poor orientation to trades on the part of young people and other key groups may also exist.	Trades Strategy	Prince Edward Island Trades Strategy
A lack of clearly defined career paths to allow individuals to move between school programs and the apprenticeship system has also been identified as an obstacle.	Trades Strategy	Prince Edward Island Trades Strategy
View the table on page C.8 and C9 for details and comparisons	Trades Strategy	Prince Edward Island Trades Strategy
Perceptions of the trades vary across different segments of the population and in different geographic regions. Perceptions also vary in accordance with the information made available to, and the awareness of, the individual. Some commonly held perceptions are listed below.	Trades Strategy	Prince Edward Island Trades Strategy
Trades' careers are held in low esteem. Careers in trades have been held in lower regard than other careers in society.	Trades Strategy	Prince Edward Island Trades Strategy
Trades' education is not highly valued. The value of a trades- related education is perceived as being less than that of other types of education, particularly university.	Trades Strategy	Prince Edward Island Trades Strategy
Careers in trades are not promoted. Parents and guidance counselors do not promote trades' careers to young people and there is a lack of good information on the trades.	Trades Strategy	Prince Edward Island Trades Strategy
Existing training paths are not integrated. At present, there are discontinuities along what should be logical paths of technical progression. For example, students taking vocational courses in high school may not receive credit for these courses if they enroll in pre-apprenticeship training at college.	Trades Strategy	Prince Edward Island Trades Strategy
There are insufficient scholarships and bursaries for students. There are an insufficient number of scholarships and bursaries available to assist students with the financial requirements associated with their technical education.	Trades Strategy	Prince Edward Island Trades Strategy
Inclusiveness is important on several levels. Firstly, it is a means whereby new people can be recruited into the trades training arena including non-traditional learners such as women, immigrants, First Nations people, and the disabled. Secondly, it will supplement, not erode, the number of potential candidates from traditional sources. Thirdly, inclusiveness will help change commonly held perceptions of the trades, thereby further improving recruitment potential.	Trades Strategy	Prince Edward Island Trades Strategy
Issues Addressed • Insufficient importance is placed on career exploration in the K- 12 system. • Career exploration is essential so that students do not enter a trade without knowing what is involved in an occupation. • Lack of early exposure to trades may lessen industry retention	Trades Strategy	Prince Edward Island Trades Strategy

These courses could be defined as pre-apprenticeship training where they are truly "before apprenticeship." They serve to provide students with the foundational skills necessary for success in apprenticeship training. The occupational skills gained in pre- apprenticeship training must be directly transferable to the apprenticeship system. It is important that articulation is in place for these foundational courses to ensure a seamless transition to apprenticeship for students following this path.	Trades Strategy	Prince Edward Island Trades Strategy
Rather than offering "pre-apprenticeship training programs" in the existing format, a partnership should be formed with the Apprenticeship Section, Holland College and employers to support a Youth Apprenticeship Program. Currently the Accelerated Youth Apprenticeship Program (ASAP) is separate from the public school system as it is administered and delivered through the Apprenticeship Section and employers. The revised youth apprenticeship system includes credit for high school completion and credit to the trade.	Trades Strategy	Prince Edward Island Trades Strategy
Functioning within a new and more integrated Trades Training Framework, the College would be expected to assume the roles articulated below. 3.2.1 Provide support to the elementary and secondary school system Supporting the school system in their provision of exploratory trades training is integral to the long-term success of the Framework. The first and most natural entry point into a career in the trades is through the school system; hence, it is critical that a seamless and logical transition occur from the school system into more advanced training situations.	Trades Strategy	Prince Edward Island Trades Strategy
To improve the effectiveness of the youth apprenticeship program in Prince Edward Island, changes to the existing program are recommended. As an integral component of an integrated training continuum, an enhanced program will provide a comprehensible career pathway for Island youth who are interested in the trades	Trades Strategy	Prince Edward Island Trades Strategy
The separation of the youth apprentice from the school system isolates the student from the support of peers, teachers, and guidance counselors.	Trades Strategy	Prince Edward Island Trades Strategy
For those students who are able to narrow down their career path, a required Apprenticeship Core Occupation course will allow youth apprentices to focus on their chosen trade. The curriculum for these occupations will be developed to meet industry standards. For students enrolled in these trades specific courses, it is expected that their summer employment is congruent with their career path as outlined in their learning plan. Upon graduation from high school, the apprentice will either continue their training at Holland College or another educational	Trades Strategy	Prince Edward Island Trades Strategy

institution, or go directly into industry.		
Noted was the expression of interest from ACOA to help fund awareness of career choices at the intermediate level of high school. Frank suggested an emphasis be put on the economic benefits of having a career in the trades.	Trades Strategy	Prince Edward Island Trades Strategy
Frank mentioned it appeared that the increase in applications was certainly influenced by the growing trend for high schools students to continue their education by attending university or college.	Trades Strategy	Prince Edward Island Trades Strategy
Barb noted that career planning is not being done at the high school level due to budgetary constraints and lack of career counselors.	Trades Strategy	Prince Edward Island Trades Strategy
Discussion was held regarding employers comments on the Provincial Vocational Institute (PVI) system. Aileen noted that employers felt career exploration was one of strongest aspects of that system. Tawna noted that the employers felt the PVI system allowed trainers and employers to determine aptitude for specific trades. Employers felt graduates of PVI training were better employees.	Trades Strategy	Prince Edward Island Trades Strategy
Craig asked if it would be beneficial to add a new section to the current apprenticeship log book to document the skills secondary students learn. Jenna noted that she has discussed the possibility of adding a column in the log book with the Youth Apprenticeship coordinator. Some discussion was held regarding whether choosing this route at the high school level would act as a barrier to university entrance. Barbara noted that the student would still be eligible for university as long as credit requirements are met.	Trades Strategy	Prince Edward Island Trades Strategy
Such courses will be fore the purpose of exploring a field rather than for the development of specialized pre-employment skills. The latter will be provided largely through Holland College.	pre Trades Strategy	Some New Directions Volume2 Recommendations
There should not be any debate about general versus vocational education. Students need both. As to whether schools should prepare people for jobs, the answer is yes.	pre Trades Strategy	Some New Directions Volume2 Recommendations

During the course of its investigation, the Study Team encountered the matter of the poor image of vocational education. 1)Vocational education is associated with heavy and dirty work 2)It is defined narrowly to include primarily traditional trades and apprenticeships 3) The label has been used to denote a level of courses rather than a focus. 4) Vocational courses are usually shorter and not taken at university 5) Vocational courses in the secondary school frequently are not accepted as entrance requirements for university. 6)There is an overwhelming focus in secondary schools on the needs of one group of students - those who are university bound 7) People who plan and manage education do not see the value of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
In Fact, the term vocational as applied to secondary school courses may no longer be appropriate. Some courses should be acceptable for university or college entrance; other may lead into advanced standing in a trade or occupation. The content and thrust of each course needs to be considered and a level assigned.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Articulation with post-secondary programs should be identified early in the curriculum planning process.	pre Trades Strategy	Some New Directions Volume2 Recommendations
List of trends that reflect the direction of secondary vocational education in other jurisdictions (list in report)	pre Trades Strategy	Some New Directions Volume2 Recommendations
The content is organized around the skills, knowledge, and attitudes required for success in a specific occupation.	pre Trades Strategy	Beyond 2000 A Study of Vocational Education For Prince Edward Island

Question 9: Selective Coding

Question 9: Does the statement indicate a role for CTE in this transition?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
However, many provinces including Prince Edward Island, recognize the importance of multiple intelligences, needs and interests of youth, and , the importance of beginning technological training for the labor force as well as personal satisfaction and achievement.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
It (the course) should foster individual and group skills, critical thinking, problem solving, design, and production skills.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
Survey question: The integration of academic and vocational education has the potential of making the experience of applied knowledge more accessible to academic students and at the same time making academic subjects more accessible to students concentrating on vocational education. {Strongly Agree 21%; Agree 60.2%; Disagree 12.7%; Strongly Disagree 1.7%)	pre Trades Strategy	High Schools In Transition
Survey question: The emphasis on vocational education should change from preparation for work to preparation for post-secondary technical education. [Strongly agree 9.9%; Agree 56.4%; Disagree 22.7; Strongly Disagree 2.8%}	pre Trades Strategy	High Schools In Transition
The focus of vocational education skills training on the psychomotor activities associated with the jobs of the industrial revolution is no longer appropriate. There is a need to expand the vocational curriculum with emphasis on the cognitive and affective aspects of jobs.	pre Trades Strategy	High Schools In Transition
There should not be any debate about general versus vocational education. Students need both. As to whether schools should prepare people for jobs, the answer is yes.	pre Trades Strategy	Some New Directions Volume2 Recommendations

During the course of its investigation, the Study Team encountered the matter of the poor image of vocational education. 1)Vocational education is associated with heavy and dirty work 2)It is defined narrowly to include primarily traditional trades and apprenticeships 3) The label has been used to denote a level of courses rather than a focus. 4) Vocational courses are usually shorter and not taken at university 5) Vocational courses in the secondary school frequently are not accepted as entrance requirements for university. 6)There is an overwhelming focus in secondary schools on the needs of one group of students - those who are university bound 7) People who plan and manage education do not see the value of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
In Fact, the term vocational as applied to secondary school courses may no longer be appropriate. Some courses should be acceptable for university or college entrance; other may lead into advanced standing in a trade or occupation. The content and thrust of each course needs to be considered and a level assigned.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Articulation with post-secondary programs should be identified early in the curriculum planning process.	pre Trades Strategy	Some New Directions Volume2 Recommendations
List of trends that reflect the direction of secondary vocational education in other jurisdictions (list in report)	pre Trades Strategy	Some New Directions Volume2 Recommendations

Question 10: Selective Coding

Question 10: Does the document make statements that connect marginalized or at risk students and CTE?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
As noted previously (pg4), PEI and other provincial departments of education are recognizing the varied needs of our youth in the public school system, and it is necessary to develop a cadre of well-trained teachers with expertise in both academic and technical areas to work with these students.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
As there is a growing understanding of multiple intelligences and the need to foster skills and talents in our youth, schools are recognizing their industrial arts/vocational programs to include the broader terms: 'technology education' and 'human resource development'.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
For those individuals who choose to teach in the public school system, their knowledge in occupational areas and a necessary second teachable subject will be an added resource to the community.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Currently seventy percent of high school students are enrolled in the academic stream, whereas only thirty percent attend post-secondary institutions after graduation. According to the teachers surveyed, this has resulted in a reduction of standards in order to accommodate a wide range in student abilities. A significant number of students enrolled in the academic stream may be better served by participating in a meaningful general or practical stream. For this to happen, attitudes of parents and students about the worthiness of the practical and general streams must change. It is interesting to note that students from any stream find success in "open" course.	pre Trades Strategy	High Schools In Transition
The committee believes that by clearly defining the objectives of each stream, student selection of courses will be more appropriately linked with their career, work and study plans.	pre Trades Strategy	High Schools In Transition

Clearly, a majority are concerned about the purpose of the present general stream and would like to see it become more meaningful rather than a "watered-down" version of the academic stream. One suggestions, with growing support throughout other provinces in Canada, is the redesigning of the general stream into a technical stream where some measure of preparation for the work place or post-secondary training are provide.	pre Trades Strategy	High Schools In Transition
Survey question: The emphasis on vocational education should change from preparation for work to preparation for post-secondary technical education. [Strongly agree 9.9%; Agree 56.4%; Disagree 22.7; Strongly Disagree 2.8%}	pre Trades Strategy	High Schools In Transition
Although all educators are caught up in the literature of the education reform movement, for the most part secondary vocational education has been ignored. The reform has been mainly directed at improving education for those who will purse post-secondary education at the university and college level. Thus the emphasis is on education upon which to build more education as opposed to education that has more immediate relevance for youth who will not pursue further education following high school.	pre Trades Strategy	High Schools In Transition
The agreement is made that for many such young people, the approach vocational education offers is a valuable and effective way to acquire the basic skills and general abilities that they will need to be successful in a wide range of endeavors.	pre Trades Strategy	High Schools In Transition
Schools cannont expect 100 percent of its young people to be able to complete twelve years of a rigorous academic program in traditional classroom settings.	pre Trades Strategy	High Schools In Transition
Both provincially and nationally, training programs in high school were replaced by Career Exploration Courses (C.E.C.). In Prince Edward Island many of these courses were developed at the school level as local pilots in order to fill the needs left with the end of Project Integration. Initially, many of the students enrolled in C.E.C. courses were also enrolled in general or practical level core courses. Many of these courses were and are in dire need of being updated and made more relevant to student needs, the modern labor market and societal demands.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
There are also many positives in place in our schools for non-university bound students at the present time. Schools have taken many initiatives to develop C.E.C. offerings, adopt work experience programs, promote entrepreneurship, and provide technology related opportunities for students	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS

At the grade 11-12 levels it is important that we retain and build on present Vocational Training, Work Experience and CEC offerings. There is a need to provide schools with frameworks and models on which to structure their CTS modules and courses taking into account available school and community facilities. Work experience, job shadowing, apprenticeships and work study programs should also be supported and expanded. Career modules should also be organized into strands with introductory, intermediate and advanced levels of difficulty.	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
The student clientele will likely be drawn from the following groups (as they are currently known): Pre-Vocational Candidates; Integration Candidates; Industrial Arts Candidates; Potential Drop-outs; Special Education Students; and Students seeking interest courses.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
None of the titles listed above will be used to describe students or courses; all courses will be classified as Career Exploration Courses open to all students.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
It is likely that the courses that have a star (*) beside their titles will have, at the very least, the designation __2 such as in 952. This would allow students with a strong interest in these courses to experience sustained manual activity in the shop using a double period.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
Each course in the Program should be composed of a "core" curriculum suitable for an open level credit but having an enrichment component for those students who wish to challenge for an academic credit.	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
In general, students who intend to study at university should obtain a minimum of 65% in five grade 12 academic subjects (including English and Math). However, it is recommended that such students attempt 6 academic courses in both grades 11 and 12.	pre Trades Strategy	Career Exploration Courses
course selection packages -- my note these offer a telling value judgment --	pre Trades Strategy	Career Exploration Courses
all teachers felt strongly that this basic training can be done in high schools and should be made available to all students.	Trades Strategy	Grey Documents (2003-2007)
Math requirements were felt to be an unrealistic barrier for many students who had an interest and skill in the trades.	Trades Strategy	Grey Documents (2003-2007)
students should not be counseled into trades to solve other issues of attendance and lack of motivation	Trades Strategy	Grey Documents (2003-2007)
The Committee was co-chaired by Holland College and industry and had representation from industry, unions, the Construction Association of P.E.I., HRSDC, the P.E.I. Department of Development and Technology, the Apprenticeship Section of the Department of Education, and the Department of Education (Secondary School System).	Trades Strategy	Prince Edward Island Trades Strategy

Employers who participated in the focus groups felt that many young people come into trades training without any prior exposure to and experience with the trades. They felt that this contributes to high dropout rates from apprenticeship training.	Trades Strategy	Prince Edward Island Trades Strategy
Focus group participants felt that young people were not provided with adequate information … at the high school level and that this has had a negative impact on trades recruitment and training.	Trades Strategy	Prince Edward Island Trades Strategy
Industry stereotypes persist. The industry caters primarily to men, with little regard for women, immigrants, the underemployed and the disabled.	Trades Strategy	Prince Edward Island Trades Strategy
Inclusiveness is important on several levels. Firstly, it is a means whereby new people can be recruited into the trades training arena including non-traditional learners such as women, immigrants, First Nations people, and the disabled. Secondly, it will supplement, not erode, the number of potential candidates from traditional sources. Thirdly, inclusiveness will help change commonly held perceptions of the trades, thereby further improving recruitment potential.	Trades Strategy	Prince Edward Island Trades Strategy
Appendix A.2 -- Limited meetings/conferences with High School Tech teachers	Trades Strategy	Prince Edward Island Trades Strategy
Craig feels # 1 (Entrance Requirement to HC Programs) should be separated from low literacy/numeracy skills.	Trades Strategy	Prince Edward Island Trades Strategy
Phillip explained that HRSDC is piloting a "Youth at Risk" program in Summerside. Various youths from the community will be given the opportunity to explore the trades. Craig noted it is sometimes detrimental to the perception of trades when projects like this happen. He noted that "Youth at Risk" do not explore careers in the Health field or Business field. Bruce agreed with Craig and thought that summer employment would be a good opportunity to introduce youth to trades.	Trades Strategy	Prince Edward Island Trades Strategy
Barb noted that the Youth at Risk program provides learners with an opportunity to work with a hands-on project. The school system is always looking for ways to keep kids in school. Programs such as these provide an opportunity for students to focus on their strengths. Barb also explained that an Applied Math course is being developed. This will be an open level course. It was asked if this would be accepted for university entrance and Barb explained that it would not.	Trades Strategy	Prince Edward Island Trades Strategy
Additional recommendations including the establishment of a provincial Vocational High School Co-ordinating Committee, a model for program planning and approval,	pre Trades Strategy	Some New Directions Volume2

strengthened guidance for students who are not university bound.		Recommendations
Historically vocational education has not been viewed as a part of general education. This may have contributed to the perceived second-class status of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
Access to vocational education electives is being restricted by an increase in the academic credits required for graduation from secondary school	pre Trades Strategy	Some New Directions Volume2 Recommendations
sixty seven percent of respondents to a question on the image of vocation education on PEI perceived the image to be neutral or negative. Sixty seven percent also feel that to a considerable or great extent, a person's decision to enroll in vocational education is affected by the image.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational high school students response to the "image" question revealed that 317 out of the 432 respondents perceived the image of vocational education to be positive or very positive. 388 of the same respondents express a high degree of satisfaction with the quality of instruction they are receiving.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Philosophy of Vocational Education Secondary education is intended to serve the needs of all school age youth. In addition to being useful in its own right, it should also prepare people for the next level of education or to enter wage earning employment. The latter receives scant, but deserves more, attention in most schools.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The traditional view of education is content-oriented, that is, it revolves around the study of history, literature, engineering, secretarial, etc. But content can no longer be used to determine which courses are vocational. A broader definition is required for the year 2000.	pre Trades Strategy	Some New Directions Volume2 Recommendations
During the course of its investigation, the Study Team encountered the matter of the poor image of vocational education. 1) Vocational education is associated with heavy and dirty work 2)It is defined narrowly to include primarily traditional trades and apprenticeships 3) The label has been used to denote a level of courses rather than a focus. 4) Vocational courses are usually shorter and not taken at university 5) Vocational courses in the secondary school frequently are not accepted as entrance requirements for university. 6)There is an overwhelming focus in secondary schools on the needs of one group of students - those who are university bound	pre Trades Strategy	Some New Directions Volume2 Recommendations

7) People who plan and manage education do not see the value of vocational education		
This arrangement reflects the reality of the larger community and allows students with varying interests and abilities to learn and grow together. Furthermore, such an integrated system provides students with an opportunity to sample from a broader offering of courses than would be possible in a specialized school.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The persistent dropout rate (20%) suggests that the present system does not meet the needs of a significant number of students. There is some evidence that vocational education helps to reduce the drop outs and, therefore, vocational courses frequently become a key component of the high school curriculum	pre Trades Strategy	Some New Directions Volume2 Recommendations
The entirely laudable aim of raising standards of education by increasing the graduation requirements has had the unfortunate effect of depriving many people of the opportunity to enroll in vocational courses.	pre Trades Strategy	Some New Directions Volume2 Recommendations
WE must do more for students who fall between academic achievers and drop outs -- comment from teacher/administrator	pre Trades Strategy	Some New Directions Volume2 Recommendations
The traditional education has focused on 'academic' students, or those who do well in lecture-based formats	post Trades Strategy	Proceedings of the Minister's Summit on Learning

Question 11: Selective Coding

Question 11: Does the document make statements which function to position academic education as more valuable to a student than CTE?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
Recently, in many areas of Canada, the need for vocational teachers in high schools has dwindled as: enrollment has decreased; many of the certified traditional industrial arts/vocational teachers have reached retirement age; and , reduced emphasis on vocational education has occurred.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
As noted previously (pg4), PEI and other provincial departments of education are recognizing the varied needs of our youth in the public school system, and it is necessary to develop a cadre of well-trained teachers with expertise in both academic and technical areas to work with these students.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
As the Faculty of Education and the school system require that middle and senior high teachers be able to teach in two different teachable areas, students choosing to use their vocational/occupational background to teach in the public school system, should pursue an academic minor in a teachable subject area.	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Specialized programs in teacher education for technological teachers have not existed in Atlantic Canada since the Nova Scotia Teachers College closed. (1997)	Trades Strategy	Articulated Bachelor of Education Human Resource Development Specialization B.ED (HRD)
Last but not least, the secondary trades strategy needs a catchy "brand" that must be clearly defined and promoted as a distinct and desirable career pathway.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
There is need to develop a Technology Education 10 course that would appeal to a greater number of students including those students who traditionally ignore this type of course.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations

The hands on component should provide students with the opportunity to experience a broad based set of transferable skills acquired through a project based approach.	Trades Strategy	Trades Training for Secondary Schools -- Research and Recommendations
Currently seventy percent of high school students are enrolled in the academic stream, whereas only thirty percent attend post-secondary institutions after graduation. According to the teachers surveyed, this has resulted in a reduction of standards in order to accommodate a wide range in student abilities. A significant number of students enrolled in the academic stream may be better served by participating in a meaningful general or practical stream. For this to happen, attitudes of parents and students about the worthiness of the practical and general streams must change. It is interesting to note that students from any stream find success in "open" course.	pre Trades Strategy	High Schools In Transition
The committee believes that by clearly defining the objectives of each stream, student selection of courses will be more appropriately linked with their career, work and study plans.	pre Trades Strategy	High Schools In Transition
Clearly, a majority are concerned about the purpose of the present general stream and would like to see it become more meaningful rather than a "watered-down" version of the academic stream. One suggestions, with growing support throughout other provinces in Canada, is the redesigning of the general stream into a technical stream where some measure of preparation for the work place or post-secondary training are provide.	pre Trades Strategy	High Schools In Transition
The committee sees an additional need to evaluate the presently approved local programs(primarily CTE programs under other names) to determine their value in the overall senior high curriculum.	pre Trades Strategy	High Schools In Transition
Survey question: The integration of academic and vocational education has the potential of making the experience of applied knowledge more accessible to academic students and at the same time making academic subjects more accessible to students concentrating on vocational education. {Strongly Agree 21%; Agree 60.2%; Disagree 12.7%; Strongly Disagree 1.7%)	pre Trades Strategy	High Schools In Transition
Survey question: The emphasis on vocational education should change from preparation for work to preparation for post-secondary technical education. [Strongly agree 9.9%; Agree 56.4%; Disagree 22.7; Strongly Disagree 2.8%}	pre Trades Strategy	High Schools In Transition

Survey question Upon successful completion of provincial requirements for graduation all students should… …receive a common diploma as is current practice (8.8%) …receive a common diploma with an attached transcript explaining the work covered (12.2%) ...receive a diploma which reflects their concentration of study, e.g., academic, general, or practical (64.1%) receive a diploma reflecting their achievement based on specified competencies (13.3%)	pre Trades Strategy	High Schools In Transition
The focus of vocational education skills training on the psychomotor activities associated with the jobs of the industrial revolution is no longer appropriate. There is a need to expand the vocational curriculum with emphasis on the cognitive and affective aspects of jobs.	pre Trades Strategy	High Schools In Transition
In the Glendenning/Hall Report (1988), it was recommended that all public school teachers (including technology education teachers) come under a single certification scheme. A move in this direction could contribute to the enhancement of the image of vocational education at the high school level.	pre Trades Strategy	High Schools In Transition
Although all educators are caught up in the literature of the education reform movement, for the most part secondary vocational education has been ignored. The reform has been mainly directed at improving education for those who will purse post-secondary education at the university and college level. Thus the emphasis is on education upon which to build more education as opposed to education that has more immediate relevance for youth who will not pursue further education following high school.	pre Trades Strategy	High Schools In Transition
The agreement is made that for many such young people, the approach vocational education offers is a valuable and effective way to acquire the basic skills and general abilities that they will need to be successful in a wide range of endeavors.	pre Trades Strategy	High Schools In Transition
Schools cannon expect 100 percent of its young people to be able to complete twelve years of a rigorous academic program in traditional classroom settings.	pre Trades Strategy	High Schools In Transition
There are also many positives in place in our schools for non-university bound students at the present time. Schools have taken many initiatives to develop C.E.C. offerings, adopt work experience programs, promote entrepreneurship, and provide technology related opportunities for students	pre Trades Strategy	SENIOR HIGH SCHOOL TRANSITIONS NEW CHALLENGES: NEW DIRECTIONS
The title Vocational Education is not used for high school purposes and is left to describe adult training courses at the post-secondary level.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses

The student clientele will likely be drawn from the following groups (as they are currently known): Pre-Vocational Candidates; Integration Candidates; Industrial Arts Candidates; Potential Drop-outs; Special Education Students; and Students seeking interest courses.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
None of the titles listed above will be used to describe students or courses; all courses will be classified as Career Exploration Courses open to all students.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
It is likely that the courses that have a star (*) beside their titles will have, at the very least, the designation __2 such as in 952. This would allow students with a strong interest in these courses to experience sustained manual activity in the shop using a double period.	pre Trades Strategy	Unit 3 Pilot Project Career Exploration Courses
The name "Vocational Program", therefore should be no longer used in reference to high school level courses; in its place the title, Career Exploration Program, should be used	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
Each course in the Program should be composed of a "core" curriculum suitable for an open level credit but having an enrichment component for those students who wish to challenge for an academic credit.	pre Trades Strategy	Unit 2 Vocational Education Committee Recommendations
In general, students who intend to study at university should obtain a minimum of 65% in five grade 12 academic subjects (including English and Math). However, it is recommended that such students attempt 6 academic courses in both grades 11 and 12.	pre Trades Strategy	Career Exploration Courses
course selection packages -- my note these offer a telling value judgment --	pre Trades Strategy	Career Exploration Courses
Math requirements were felt to be an unrealistic barrier for many students who had an interest and skill in the trades.	Trades Strategy	Grey Documents (2003-2007)
Exploratory programs identified***my note	post Trades Strategy	Intermediate Program of Studies
Skills have to be contextualized. That is, the connection between work and basic skills (including communications and math) has to be evident.	Trades Strategy	Prince Edward Island Trades Strategy
Proper information isn't being distributed in the high schools to ensure students can make informed decisions about courses and careers.	Trades Strategy	Prince Edward Island Trades Strategy
The image of the construction trades among youth, counselors and parents needs to be improved. Better marketing is required to promote the skilled trades as viable career options.	Trades Strategy	Prince Edward Island Trades Strategy
The lack of awareness about trades represents another important generic barrier.	Trades Strategy	Prince Edward Island Trades Strategy

Career information is lacking in many occupational areas, and a poor orientation to trades on the part of young people and other key groups may also exist.	Trades Strategy	Prince Edward Island Trades Strategy
A shortage of effective high school trades work-experience and industrial arts programs … represent significant educational barriers to apprenticeship.	Trades Strategy	Prince Edward Island Trades Strategy
…youths bring inadequate essential skills, including mathematics and literacy, to their apprenticeship training.	Trades Strategy	Prince Edward Island Trades Strategy
View the table on page C.8 and C9 for details and comparisons	Trades Strategy	Prince Edward Island Trades Strategy
Perceptions of the trades vary across different segments of the population and in different geographic regions. Perceptions also vary in accordance with the information made available to, and the awareness of, the individual. Some commonly held perceptions are listed below.	Trades Strategy	Prince Edward Island Trades Strategy
Trades' careers are held in low esteem. Careers in trades have been held in lower regard than other careers in society.	Trades Strategy	Prince Edward Island Trades Strategy
Trades' education is not highly valued. The value of a trades- related education is perceived as being less than that of other types of education, particularly university.	Trades Strategy	Prince Edward Island Trades Strategy
Careers in trades are not promoted. Parents and guidance counselors do not promote trades' careers to young people and there is a lack of good information on the trades.	Trades Strategy	Prince Edward Island Trades Strategy
Essential skills are the foundational skills that underpin the higher order functioning of a worker. Literacy, numeracy, oral communications and the ability to work with others would all be considered to be essential skills. Complete proficiency in essential skills is prerequisite for the development of more applied and higher order work functions. Issues concerning essential skills include:	Trades Strategy	Prince Edward Island Trades Strategy
There are insufficient scholarships and bursaries for students. There are an insufficient number of scholarships and bursaries available to assist students with the financial requirements associated with their technical education.	Trades Strategy	Prince Edward Island Trades Strategy
Issues Addressed • Insufficient importance is placed on career exploration in the K- 12 system. • Career exploration is essential so that students do not enter a trade without knowing what is involved in an occupation. • Lack of early exposure to trades may lessen industry retention	Trades Strategy	Prince Edward Island Trades Strategy
It is recommended that the secondary school system reduce the emphasis on developing job specific skills to first providing core skills across a majority of trades and the optional provision of skills related to an occupational field (i.e. motive power, metal trades). The specification would be to a cluster of occupations rather than to specific occupations. Increased specificity could be supported through extended project or personal challenge	Trades Strategy	Prince Edward Island Trades Strategy

opportunities. These extended projects or personal challenge opportunities would enrich learning by encouraging students to pursue in depth study in an area that interests and motivates them.		
The separation of the youth apprentice from the school system isolates the student from the support of peers, teachers, and guidance counselors.	Trades Strategy	Prince Edward Island Trades Strategy
The existing Accelerated Secondary Apprenticeship Program (ASAP) will be integrated into the secondary school system with course offerings made available in every high school and to every student who elects to explore the trades as a career choice.	Trades Strategy	Prince Edward Island Trades Strategy
It was noted that some Island politicians are of the mindset that the old PVI system was a perfect model for trades training. Jeanette feels that we must ensure the needs of industry are met by producing a highly trained, skilled workforce.	Trades Strategy	Prince Edward Island Trades Strategy
Barb noted that the Youth at Risk program provides learners with an opportunity to work with a hands-on project. The school system is always looking for ways to keep kids in school. Programs such as these provide an opportunity for students to focus on their strengths. Barb also explained that an Applied Math course is being developed. This will be an open level course. It was asked if this would be accepted for university entrance and Barb explained that it would not.	Trades Strategy	Prince Edward Island Trades Strategy
Craig asked if it would be beneficial to add a new section to the current apprenticeship log book to document the skills secondary students learn. Jenna noted that she has discussed the possibility of adding a column in the log book with the Youth Apprenticeship coordinator. Some discussion was held regarding whether choosing this route at the high school level would act as a barrier to university entrance. Barbara noted that the student would still be eligible for university as long as credit requirements are met.	Trades Strategy	Prince Edward Island Trades Strategy
When PVI opened, students in grade nine had the option of attending PVI for a year of vocational exploration before making their choice of which trade to pursue in grades 10 through to 12. All students at PVI continued their academic studies for half of each day while learning a trade during the other half of the day. Students graduated with a high school certificate and a trades certificate.	Trades Strategy	Prince Edward Island Trades Strategy

In the early 1970s, the PVI system was modified and became the "Post-10" system. Students took trades orientation in grade nine to explore a variety of trades. In grade 10, they would select one trade and begin training on a half-time basis. Upon completing grade 10, students took one full year of trades training and graduated with their trades certificate. Whereas they did not take any academic studies after grade 10, they did not receive a high school certificate. This system worked well in terms of providing students with trades skills but fell short in that it left them without any high school credential. The system only ran for a few years.	Trades Strategy	Prince Edward Island Trades Strategy
The last paragraph in B.1.1 is interesting to note as well	Trades Strategy	Prince Edward Island Trades Strategy
In addition, the Report recommends that a course called Introduction to Technology be required for all students.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Additional recommendations including the establishment of a provincial Vocational High School Co-ordinating Committee, a model for program planning and approval, strengthened guidance for students who are not university bound.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational high school programs on Prince Edward Island are of relatively recent origin (since the early 1960's) and initially were shaped by federal criteria.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Historically vocational education has not been viewed as apart of general education. This may have contributed to the perceived second-class status of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
Access to vocational education electives is being restricted by an increase in the academic credits required for graduation from secondary school	pre Trades Strategy	Some New Directions Volume2 Recommendations
sixty seven percent of respondents to a question on the image of vocation education on PEI perceived the image to be neutral or negative. Sixty seven percent also feel that to a considerable or great extent, a person's decision to enroll in vocational education is affected by the image.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational high school students response to the "image" question revealed that 317 out of the 432 respondents perceived the image of vocational education to be positive or very positive. 388 of the same respondents express a high degree of satisfaction with the quality of instruction they are receiving.	pre Trades Strategy	Some New Directions Volume2 Recommendations

Philosophy of Vocational Education Secondary education is intended to serve the needs of all school age youth. In addition to being useful in its own right, it should also prepare people for the next level of education or to enter wage earning employment. The latter receives scant, but deserves more, attention in most schools.	pre Trades Strategy	Some New Directions Volume2 Recommendations
There should not be any debate about general versus vocational education. Students need both. As to whether schools should prepare people for jobs, the answer is yes.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The traditional view of education is content-oriented, that is, it revolves around the study of history, literature, engineering, secretarial, etc. But content can no longer be used to determine which courses are vocational. A broader definition is required for the year 2000.	pre Trades Strategy	Some New Directions Volume2 Recommendations
During the course of its investigation, the Study Team encountered the matter of the poor image of vocational education. 1)Vocational education is associated with heavy and dirty work 2)It is defined narrowly to include primarily traditional trades and apprenticeships 3) The label has been used to denote a level of courses rather than a focus. 4) Vocational courses are usually shorter and not taken at university 5) Vocational courses in the secondary school frequently are not accepted as entrance requirements for university. 6)There is an overwhelming focus in secondary schools on the needs of one group of students - those who are university bound 7) People who plan and manage education do not see the value of vocational education	pre Trades Strategy	Some New Directions Volume2 Recommendations
The secondary schools should provide a comprehensive and integrated system of course offerings. By comprehensive is meant a school which offers both academic and vocational courses under "one roof"	pre Trades Strategy	Some New Directions Volume2 Recommendations
This arrangement reflects the reality of the larger community and allows students with varying interests and abilities to learn and grow together. Furthermore, such an integrated system provides students with an opportunity to sample from a broader offering of courses than would be possible in a specialized school.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Vocational courses, per se, should not be locked into a single level or classification. In concert with the notion of an integrated curriculum, vocational education courses should reflect levels of difficulty that parallel those of academic courses.	pre Trades Strategy	Some New Directions Volume2 Recommendations

In Fact, the term vocational as applied to secondary school courses may no longer be appropriate. Some courses should be acceptable for university or college entrance; other may lead into advanced standing in a trade or occupation. The content and thrust of each course needs to be considered and a level assigned.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The entirely laudable aim of raising standards of education by increasing the graduation requirements has had the unfortunate effect of depriving many people of the opportunity to enroll in vocational courses.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Graduation requirements should be such that students will have access to a range of vocational education courses. Furthermore, the graduation requirements should be sufficiently flexible to allow students to select a series of vocational courses from a cluster or a field.	pre Trades Strategy	Some New Directions Volume2 Recommendations
University entrance requirements should not dictate graduation requirements for all students particularly those who pursue an apprenticeship or post-secondary training.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The Study Team believes that the term Vocational should be removed as a designation for courses and that courses simply be referred to by course names: welding, accounting retail sales, etc.	pre Trades Strategy	Some New Directions Volume2 Recommendations
The time allocation and credit value of each course must be determined. The vocational high school courses should be designed in such a way that they may be easily integrated into the overall high school curriculum. To this end, they should be contained in at least three or four levels of difficulty to correspond with levels in other parts of the curriculum	pre Trades Strategy	Some New Directions Volume2 Recommendations
Present graduation requirements ten to discourage academic students from taking a vocational course as part of their high school program. Comment Teacher/Administrator	pre Trades Strategy	Some New Directions Volume2 Recommendations
Where feasible, some courses may be offered at more than one level of difficulty which parallel other courses in the curriculum. Such levels might include practical, general, regular (academic), and advanced)	pre Trades Strategy	Some New Directions Volume2 Recommendations
List of trends that reflect the direction of secondary vocational education in other jurisdictions (list in report)	pre Trades Strategy	Some New Directions Volume2 Recommendations
In view of the fact that the high school curriculum has a limited capacity for expansion, "Introduction to Technology", might be included as part of a revised Grade 10 science program, or even part of an Industrial Arts program.	pre Trades Strategy	Some New Directions Volume2 Recommendations
Image on page 8 of report	post Trades Strategy	Proceedings of the Minister's Summit on Learning

The demands for analytical work (engineers) and interactive work (consultants) is accelerating, while the demand for skills in manual and routine work (such as manufacturing, and primary services) is for the most part decelerating, or leveling off at best. Island students of today need to be ready for the analytical and interactive world of tomorrow.	post Trades Strategy	Proceedings of the Minister's Summit on Learning
The traditional education has focused on 'academic' students, or those who do well in lecture-based formats	post Trades Strategy	Proceedings of the Minister's Summit on Learning
Assessment and evaluation of learning is not only driven by teachers, students, and parents, it is also driven by post-secondary institutions that use grades and marks as a means for determining eligibility for courses, programs, and also for determining the apportion scholarship and bursary support.	post Trades Strategy	Proceedings of the Minister's Summit on Learning

Question 12: Selective Coding

Question 12: Does the document indicate if CTE teachers were involved in writing or developing the document?		
Evidence	**Date Range from Open Coding (Yellow)**	**Document Title**
The Committee was co-chaired by Holland College and industry and had representation from industry, unions, the Construction Association of P.E.I., HRSDC, the P.E.I. Department of Development and Technology, the Apprenticeship Section of the Department of Education, and the Department of Education (Secondary School System).	Trades Strategy	Prince Edward Island Trades Strategy
High School Training. Barbara asked when the interim report would be tabled and expressed concern over the fact that little contact has been made with the secondary school system. Jenna noted that a meeting was held over the summer and it was agreed that the Department of Education would provide the working group with a contact for each of the high schools.	Trades Strategy	Prince Edward Island Trades Strategy
There is some concern about the current lack of seamlessness between the high schools and Holland College. Barbara noted there is concern over what is happening in the high schools and that no study/reports have been done recently. The Dept. of Education feels there is a real need to look at what is happening at the high school level.	Trades Strategy	Prince Edward Island Trades Strategy
It was agreed that a working group would be formed with participants from the high school level to determine what information we require from the high schools. Craig and Barbara will work with Jenna to determine a Terms of Reference for this working group.	Trades Strategy	Prince Edward Island Trades Strategy
Interesting to note the comment above was made in Nov. of 2004, no record of a formal meeting with High School Tech teachers took place until April and May of 2005, the Final Report was already published and submitted to government (May 2005)	Trades Strategy	Prince Edward Island Trades Strategy
In order to provide an opportunity for those directly involved with vocational education to express their concerns and make suggestions, an extensive consultation and information gathering process was implemented.	pre Trades Strategy	Some New Directions Volume2 Recommendations

Appendix D: Program of Studies Analysis

Course Grade Level

Course Category	400 Grade 10	500 Grade 11	600 Grade 12	700 Grade 10/11	800 Grade 11/12	900 Grade 10/11/12	Total Number of Courses
Arts	1	1	3	1	1	0	7
Music	2	2	2	0	1	0	7
Business Education	0	1	1	1	2	0	5
Career Education and Personal Development	1	1	1	1	2	0	6
Career and Technical Education	0	0	0	4	18	0	22
Communications and Information Technology	1	1	1	0	3	0	6
English (incl. French Language)	7	8	5	4	1	0	25
Home Economics and Family Life Education	3	2	2	0	1	0	8
Mathematics	4	5	5	0	1	0	15
Physical Education	1	0	1	0	1	0	3
Resource	1	1	1	0	0	0	3
Science	3	4	8	1	3	0	19
Social Studies *(incl. French Social Studies)*	7	7	10	0	1	0	25
Totals	**31**	**33**	**40**	**12**	**35**	**0**	**151**

Course Code Level

Course Coding	Open	Enriched	Academic	General	Practical	Modified	Total Number of Courses
Arts	5	0	2	0	0	0	7
Music	1	0	6	0	0	0	7
Business Education	3	0	2	0	0	0	5
Career Education and Personal Development	6	0	0	0	0	0	6
Career and Technical Education	22	0	0	0	0	0	22
Communications and Information Technology	4	0	2	0	0	0	6
English **(incl. French Language)**	5	0	12	4	4	0	25
Home Economics and Family Life Education	1	0	7	0	0	0	8
Mathematics	1	1	7	3	3	0	15
Physical Education	2	0	1	0	0	0	3
Resource	3	0	0	0	0	0	3
Science	4	2	12	1	0	0	19
Social Studies ***(incl. French Social Studies)***	1	0	18	4	2	0	25
Totals	**58**	**3**	**69**	**12**	**9**	**0**	**151**

Courses Required for Graduation

Course Category	400 Grade 10	500 Grade 11	600 Grade 12	700 Grade 10/11	800 Grade 11/12	900 Grade 10/11/12	Total Number of Courses
English (incl. French Language)	7	8	5	4	1	0	25
Mathematics	4	5	5	0	1	0	15
Science	3	4	8	1	3	0	19
Social Studies *(incl. French Social Studies)*	7	7	10	0	1	0	25
Totals	**21**	**24**	**28**	**5**	**6**	**0**	**84**
Course Coding	**Open**	**Enriched**	**Academic**	**General**	**Practical**	**Modified**	**Total Number of Courses**
English (incl. French Language)	5	0	12	4	4	0	25
Mathematics	1	1	7	3	3	0	15
Science	4	2	12	1	0	0	19
Social Studies *(incl. French Social Studies)*	1	0	18	4	2	0	25
Totals	**11**	**3**	**49**	**12**	**9**	**0**	**84**

Electives Not Required for Graduation by Course Category

Course Category	400 Grade 10	500 Grade 11	600 Grade 12	700 Grade 10/11	800 Grade 11/12	900 Grade 10/11/12	# of Courses
Arts	1	1	3	1	1	0	7
Music	2	2	2	0	1	0	7
Business Education	0	1	1	1	2	0	5
Career Education and Personal Development	1	1	1	1	2	0	6
Career and Technical Education	0	0	0	4	18	0	22
Communications and Information Technology	1	1	1	0	3	0	6
Home Economics and Family Life Education	3	2	2	0	1	0	8
Physical Education	1	0	1	0	1	0	3
Resource	1	1	1	0	0	0	3
Totals	**10**	**9**	**12**	**7**	**29**	**0**	**67**

Electives Not Required for Graduation by Course Coding

Course Coding	Open	Enriched	Academic	General	Practical	Modified	# of Courses
Arts	5	0	2	0	0	0	7
Music	1	0	6	0	0	0	7
Business Education	3	0	2	0	0	0	5
Career Education and Personal Development	6	0	0	0	0	0	6
Career and Technical Education	22	0	0	0	0	0	22
Communications and Information Technology	4	0	2	0	0	0	6
Home Economics and Family Life Education	1	0	7	0	0	0	8
Physical Education	2	0	1	0	0	0	3
Resource	3	0	0	0	0	0	3
Totals	**47**	**0**	**20**	**0**	**0**	**0**	**67**

CTE Electives Not Required for Graduation

Course Category	400 Grade 10	500 Grade 11	600 Grade 12	700 Grade 10/11	800 Grade 11/12	900 Grade 10/11/12	Total Number of Courses
Business Education	0	1	1	1	2	0	5
Career Education and Personal Development	1	1	1	1	2	0	6
Career and Technical Education	0	0	0	4	18	0	22
Communications and Information Technology	1	1	1	0	3	0	6
Home Economics and Family Life Education	3	2	2	0	1	0	8
Totals	**5**	**5**	**5**	**6**	**26**	**0**	**47**
Course Coding	**Open**	**Enriched**	**Academic**	**General**	**Practical**	**Modified**	**Total Number of Courses**
Business Education	3	0	2	0	0	0	5
Career Education and Personal Development	6	0	0	0	0	0	6
Career and Technical Education	22	0	0	0	0	0	22
Communications and Information Technology	4	0	2	0	0	0	6
Home Economics and Family Life Education	1	0	7	0	0	0	8
Totals	**36**	**0**	**11**	**0**	**0**	**0**	**47**

List of High School Handbooks

- Bluefield Senior High School
- Colonel Grey High School
- Charlottetown Rural High School
- Kensington Intermediate/Senior High School
- Kinkora Regional High School
- Montague Regional High School
- Morel Regional High School
- Souris Regional High School
- Three Oaks Senior High School
- Westisle Composite High School